U.S. DEPARTMENT OF TRANSPORTATION
Federal Highway Administration

RECORD OF DECISION

Southern Corridor from I-15 at Reference Post 2 in St. George to SR 9 near Hurricane, Washington County, Utah

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1.0 Decision

The Federal Highway Administration (FHWA) hereby approves the selection of the 2800 West Alternative for the Southern Corridor as identified in the Final Environmental Impact Statement (Final EIS) dated April 2005. This approval constitutes FHWA's acceptance of the 2800 West Alternative (herein after the Selected Alternative) alignment of the Southern Corridor and completes the approval process for the environmental evaluation.

This Record of Decision presents the basis for a decision on implementing a transportation project consisting of an interchange at Reference Post (RP) 2 on I-15 in St. George and an associated 26-mile highway that connects to SR 9 in Hurricane, Utah, at about 2800 West. FHWA has carefully reviewed all concerns and has determined that the approval of the Selected Alternative is in the best overall public interest based on a balanced consideration of the need for safe and efficient transportation and the social, economic, and environmental impacts of the Selected Alternative. The Selected Alternative reasonably maximizes the transportation benefit, minimizes environmental impacts, and effectively meets the project's purpose and need.

This Record of Decision is issued under the requirements of Chapter 40 of the Code of Federal Regulations (CFR) 1502.2 and Chapter 23 CFR 771.127. The following information in this Record of Decision is based on the information presented in the Southern Corridor Final EIS prepared by FHWA and the Utah Department of Transportation (UDOT), which was released for public review during April, May, and June 2005. The Final EIS and the entire project record are available for review on request to the FHWA Utah Division.

Agencies cooperating with the preparation of the Southern Corridor EIS include the U.S. Environmental Protection Agency (EPA), the U.S. Fish and Wildlife Service (USFWS), and the Bureau of Land Management (BLM).

2.0 Alternatives Considered (Page 2-1 of the Final EIS)

This Record of Decision is based on the consideration of all of the alternatives described and evaluated in Chapter 2, Alternatives, and Chapter 4, Environmental Consequences, of the Final EIS. As part of the initial alternative screening process, potential options were evaluated to determine whether they would meet the project's purpose and need that the proposed facility must operate as a regional facility for traffic between St. George, Washington City, and Hurricane; must be compatible with land use plans; and must improve mobility and access to planned development.

Summary of the Alternative Development Process

As part of the EIS analysis, both non-highway and highway alternatives were evaluated. The alternatives considered were the No-Build, arterial roads, transportation management strategies, mass transit, and highway.

Arterial Roads Alternative. A review of the existing road network, future land use plans, preferences of the local community, and physical constraints was conducted to determine whether improving the existing arterial system could meet the project's purpose and need. FHWA determined that an improved arterial system would not meet the primary purpose of providing a single regional transportation facility between St. George, Washington City, and Hurricane. The expanded arterial system would also not be compatible with the local cities' and the county's land use plans for a regional transportation facility or with the preferences of the local communities.

Transportation Management Strategies Alternative. Transportation management strategies (TMS) increase the person-capacity of a transportation system without adding pavement or travel lanes and include alternative options such as fringe parking, ride sharing, and high-occupancy vehicle lanes on existing roadways. TMS alone cannot address the primary purpose and need for a proposed regional facility. TMS will ease traffic on I-15 and SR 9 and other major arterial roads, but they cannot meet the demand or substantially improve mobility in the area, which is hampered by the physical layout of the roadways.

Mass Transit Alternative. Mass transit includes reasonable and feasible transit options such as bus service and rail systems. Expanded bus service with an expanded arterial road network was evaluated, but determined that bus service would not meet the demand for future developed areas and would not meet the main purpose of providing a regional transportation facility between St. George, Washington City, and Hurricane. For these reasons, a bus transit system was eliminated from detailed study. Additionally, rail transit that could provide access to planned development was evaluated. However, the region's expected population density would not support a rail transit system, and the St. George area lacks a centralized business district with the required square footage to support a rail transit system.

Highway Alternative. A highway alternative was developed that takes into account local planning objectives, accommodates future growth and development patterns, and provides connectivity between St. George and Hurricane. Based on traffic modeling and the anticipated future growth and planned development in the study area, a highway alternative would meet the project's primary purpose of providing a regional transportation facility, would reduce some traffic on existing and future arterial roads, and would accommodate future planned developments. Additionally, a highway alternative would improve mobility in the area and reduce travel times, costs, and congestion on the roadways south and east of I-15. Therefore, a highway alternative was carried forward for detailed study.

For the highway alternative, a regional corridor was identified within which alternative roadway alignments were developed. Alignment alternatives were developed by gathering and evaluating technical information within the regional alignment.

Alternatives Considered for Detailed Study

No-Build Alternative. The No-Build Alternative assumed that there would be no construction of the Southern Corridor or Atkinville interchange. The No-Build Alternative did, however, include other transportation improvements including expanding the existing arterial system and adding a new interchange on I-15 at RP 13 in Washington City. The No-Build Alternative would be implemented as part of the cities' future transportation planning to meet the expected growth by providing access to new developments as they are built. However, the No-Build Alternative cannot meet the anticipated demand or substantially improve mobility in the area.

4300 West Alternative (Environmentally Preferred Alternative). The 4300 West Alternative would start at the I-15 interchange at about RP 2 and would extend 20 miles to the intersection of 4300 West with SR 9 near Hurricane. The alternative would also connect to the Sun River Parkway west of I-15 at RP 2. This alternative is the most westerly on SR 9. It would include approximately 11 interchanges on the Southern Corridor. The 4300 West Alternative was considered the Environmentally Preferred Alternative solely because it impacted the least amount of wildlife habitat (779 acres compared to 846 acres for the 3400 West Alternative and 1,009 acres for the 2800 West Alternative). This alternative also has the shortest roadway corridor.

Although the 4300 West Alternative would impact less wildlife habitat, the alternative along with the 3400 West Alternative would pass within 450 feet of Willow Springs, a rare year-round water source in this part of Washington County. Willow Springs provides habitat for the Arizona toad (a Utah species of concern) and other wildlife in the area and would experience increased noise levels from the alternatives. The 2800 West Alternative turns east before reaching Willow Springs and would not impact the area. The other environmental impacts of the three build alternatives would be similar, with the main difference being the total number of acres of wildlife habitat affected and the proximity to Willow Springs.

Although this alternative is the Environmentally Preferred Alternative based on wildlife habitat impacted, it was not selected because the interchange location of this alternative on SR 9 near the Virgin River is the greatest roadway safety concern of the three alternatives, because of the poor sight distance at SR 9, and because the alternative had less public and community support than the 2800 West Alternative (Selected Alternative). The poor sight distance is the result of a curve on SR 9 prior to the 4300 West Alternative interchange connection point. With the curve at this location as well as the existing commercial and residential developments and the sewage lagoons, drivers heading east on SR 9 would have difficulty seeing traffic exiting and entering the Southern Corridor.

3400 West Alternative. The 3400 West Alternative would start at the I-15 interchange at about RP 2 and would extend 22 miles to the intersection of 3400 West with SR 9 near Hurricane. The alternative would also connect to the Sun River Parkway west of I-15 at RP 2. This alternative would include approximately 10 interchanges on the Southern Corridor.

2800 West Alternative (Selected or Preferred Alternative). The Selected Alternative was identified as the Preferred Alternative in the Final EIS. The Selected Alternative would start at the I-15 interchange at about RP 2 and would extend 26 miles to the intersection of 2800 West with SR 9 in Hurricane. The alternative would also connect to the Sun River Parkway west of I-15 at RP 2. This alternative is the most easterly on SR 9. It would include approximately 12 interchanges on the Southern Corridor.

Although it is not the Environmentally Preferred Alternative, the Preferred Alternative (2800 West Alternative) was selected based on public and city support and the consideration of environmental impacts. The 2800 West Alternative is supported by the City of Hurricane because of the connection at SR 9 and because the alternative had the most support by local residents. The Hurricane City Council and Planning Commission support the 2800 West Alternative for the following reasons:

- Fewer property owners involved
- Improved access to recreation sites and projected future development
- Better opportunities for east-west connection from Hurricane
- Best location for connection to SR 9 because of safer access and proximity to the main part of Hurricane
- Lowest number of cultural sites affected

The environmental impacts of the three build alternatives are similar, with the main difference being the total number of acres of wildlife habitat affected. The 2800 West Alterative would convert the greatest amount of wildlife habitat to roadway use, but it would not impact the Willow Springs area, unlike the other alternatives. Because the alternative's environmental impacts would be similar to those from the other build alternatives for most resources, the alternative would have no impacts to the Willow Springs area, the alternative has a safe connection point to SR 9, and the alternative has the support of the public and the local community, the 2800 West Alternative became the Selected Alternative.

3.0 Measures to Minimize Harm from the Selected Alternative

The environmental impacts of the Selected Alternative were evaluated in both a qualitative and quantitative manner in the Final EIS. Both beneficial and adverse impacts were evaluated, and mitigation measures were developed when necessary. As described in Chapter 2 of the EIS, the local land managing and resource agencies of BLM, the School and Institutional Trust Lands Administration (SITLA), and USFWS were consulted to develop an alignment that would minimize impacts to the natural environment. The main consideration that went into developing the Selected Alternative was minimizing impacts to sensitive plant species in the project area.

FHWA will work closely with UDOT to ensure that all practical measures to avoid or minimize adverse impacts from the Selected Alternative will be implemented. The following measures, which are described in detail in the referenced sections of the Final EIS, have been identified.

Implementing the Selected Alternative will result in construction period (short-term) impacts as well as impacts associated with the long-term operation of the project. FHWA has determined that the measures described below are appropriate to mitigate for the Selected Alternative and will be implemented. UDOT will administer implementation of all the mitigation measures described in the Final EIS, and FHWA will ensure that they are properly implemented via the monitoring and enforcement program discussed in this Record of Decision (Section 4.0).

3.1 Farmland (Page 4-18 of the Final EIS)

Grazing Allotments

Five grazing allotments would be directly affected by the Selected Alternative. A total reduction of 385 acres and 25 animal unit months (AUMs) would occur. In addition, the Selected Alternative would bisect some grazing allotments, which could cause indirect impacts because grazing the remaining smaller parcels would not be practical.

Before construction begins, the parts of the grazing permits directly affected by the Selected Alternative will be terminated and, if necessary, the State of Utah will review each permit holder's impacted AUMs and other land improvements on a case-by-case basis to determine potential compensation.

3.2 Social Environment (Page 4-25 of the Final EIS)

Socially Disadvantage Groups

Although no socially disadvantaged groups or environmental justice populations would be affected by construction or operation of the Selected Alternative, UDOT will ensure the use of best management practices (BMPs) to minimize and control substances that could cause adverse human health effects.

With respect to Executive Order 12898 (Environmental Justice), construction and operation of the Selected Alternative will not result in disproportionately high or adverse effects on minority or low-income populations in the study area.

Recreation Resources

The Selected Alternative would intersect the Temple and Honeymoon Trails. These trails are used by a small number of equestrians, hikers, and off-highway vehicle (OHV) and all-terrain vehicle (ATV) users. Although the trails are not marked or defined in the project area, trail markers directing trail users along overpasses or underpasses using the Southern Corridor proposed trail to allow continued use of the trails.

The Selected Alternative alignment was developed to avoid direct impacts to recreation facilities at the Sand Hollow State Park and Sand Mountain Special Recreation Management Area (SRMA), although the highway bisects activities between these two recreation areas. The Selected Alternative would follow the same alignment as the proposed commuter road shown in the recreation plan for Sand Hollow State Park. To minimize impacts, UDOT will work with BLM and the Utah Division of Parks and Recreation to provide access between the Sand Hollow State Park and the Sand Mountain SRMA to the south. The primary access to be maintained would be between the reservoir and the proposed OHV campground. However, as park facilities are further developed, access points could change or others could become necessary. Before final design, UDOT will consult with the agencies to determine the location and type of access required. The access point for the proposed OHV campground will need to facilitate use by recreational vehicles such as motor homes. In addition, noise monitoring and noise modeling for the highway will be conducted before highway construction and after development of the Sand Hollow State Park and Recreation Area to determine if noise abatement measures are required.

To assist BLM in providing improved access to their publicly administered lands, UDOT will place right-of-way (ROW) fence along the Selected Alternative on BLM-administered public land to help control access to sensitive areas. The placement of the fence will be coordinated with BLM.

3.3 Relocations (Page 4-40 of the Final EIS)

Relocation of one residence will be required under the Selected Alternative. Assistance and re-establishment expenses will be provided to the displaced property owner and lease holders according to eligibility requirements and other requirements of the Uniform Relocation Assistance and Real Property Acquisition Policies Act (URAA).

3.5 Joint Development (Page 4-47 of the Final EIS)

Joint development represents opportunities to retain or enhance important values in the communities affected by the proposed project. The Southern Corridor project is part of a joint development effort between BLM, UDOT, EPA, USFWS, and the local communities. The Southern Corridor has been included as part of the BLM St. George Field Office's Resource Management Plan. BLM has been working with UDOT and the local communities to identify a suitable route for the proposed highway.

The Southern Corridor could include a joint development opportunity involving a non-motorized trail for pedestrians, bicyclists, and equestrians. This Southern Corridor trail would extend the length of the proposed project and could connect to other trails in the area such as the Washington County Regional Trail Cooperative Master Plan system. The 300-foot highway ROW proposed for this project includes room for the trail.

3.4 Air Quality (Page 4-49 of the Final EIS)

The entire project area is designated as meeting National Ambient Air Quality Standards. The Selected Alternative is expected to enhance the overall effectiveness and efficiency of trips in the region by generally decreasing trip times, so the project should decrease regional vehicle emissions of carbon monoxide and volatile organic compounds. To predict local air quality impacts, dispersion modeling was conducted. Results of the modeling demonstrated that the Selected Alternative would not cause air quality standards to be exceeded.

Although no air quality impacts are expected from operation of the Selected Alternative, construction would cause short-term temporary air quality impacts. Air emission mitigation measures for construction will be developed as part of the Emission Control Plan submitted to the State of Utah. Mitigation measures will include the following:

- *Fugitive Dust Control.* The contractor will maintain a fugitive dust control program. This program will include wetting excavation areas, unpaved parking and staging areas, and onsite stockpiles of debris, dirt, or dusty material.
- *Street Sweeping.* The contractor will use street-sweeping equipment at paved site access points.
- *Equipment Emissions.* The contractor will shut off construction equipment when it is not in direct use to reduce idling.

The following other mitigation measures could be implemented to minimize air quality impacts:

- Use newer, "cleaner" construction equipment.
- Install control equipment on diesel construction equipment (particulate filter/traps, oxidizing soot filters, oxidation catalysts, and other appropriate control devices to the extent that is technically feasible).
- Reroute truck traffic away from schools or communities when possible.
- Evaluate the use of alternative engines and diesel fuels such as electric engines, engines that use liquefied or compressed natural gas, diesel engines that meet EPA 2007 regulations, diesel engines fueled with low-sulfur fuel, and diesel engines outfitted with catalyzed diesel particulate filters and fueled with low-sulfur (less than 15 ppm sulfur) fuel.

3.5 Water Quality (Page 4-70 of the Final EIS)

Surface Water

The Selected Alternative is not expected to degrade the water quality of the Virgin River or to affect any of its beneficial use classifications. However, as part of the construction process, a Utah Pollution Discharge Elimination System (UPDES) permit will be obtained. This permit will stipulate that the contractor design and implement measures, including BMPs, to limit the amount of eroded sediment that leaves the work area. BMPs will include the use of UDOT standard drawings for temporary erosion control. Examples of temporary BMPs that might be included in the UPDES permit for construction include silt fences, silting basins, retention ponds, check dams, and slope drains.

Permanent BMPs to be implemented for the Selected Alternative include roadside ditches and retention basins designed to retain all runoff from a 10-year storm event. In addition, after construction, the disturbed ROW will be revegetated with plant species native to Washington County; the ROW will then be used as vegetative filter strips.

Groundwater Rights and Wells

Under the Selected Alternative, eight groundwater wells would be affected. UDOT will either purchase the groundwater right from the owner or pay for a transfer of the right. In addition, the Selected Alternative would include land within the protection zone of four municipal wells. Coordination will take place with owners of municipal wells to determine if the highway is consistent with the land management approach established in their Drinking Water Source Protection Plan for each of the four source protection zones.

3.6 Water Body Modification and Wildlife (Page 4-81 of the Final EIS)

Wildlife Habitat

Construction of the Selected Alternative would result in the loss of 1,009 acres of desert shrub/scrub habitat. Impacts would include changes to the composition of the plant community, changes in plant structure, and possibly weed invasion. Mitigation will include minimizing impacts to habitat by removing only vegetation that occurs within the construction ROW. Reclamation and revegetation will occur during road construction.

To minimize impacts from invasive species, UDOT will follow specifications outlined in UDOT Special Provision Section 02926S, Invasive Weed Control, to minimize construction impacts and manage the ROW for invasive species. The plant mix for revegetation of disturbed areas will consist of native plants indigenous to the project area.

Wildlife (Direct)

The Selected Alternative would result in the loss and alteration of wildlife habitat. Direct impacts to wildlife as a result of lost habitat would include the loss of food sources and cover, temporary and/or permanent displacement, fragmentation of habitat, and incidental mortality of resident wildlife. To minimize impacts to wildlife, wildlife habitat disturbed by construction within the highway ROW will be revegetated after construction with native plant species.

An active golden eagle nest was located south of the Selected Alternative on a large rock outcrop overlooking the proposed alignment. The eagle uses the area from February to June and could be disturbed by construction activities and highway use as a result of road noise and visual intrusion. To minimize construction-related impacts, preconstruction surveys for golden eagles will be conducted in the project area where the active nest was noted. Nest monitoring will be conducted from January 1 to August 31 for any activities occurring within 0.5 mile of the nest. If golden eagles are disturbed in any manner, construction activities will stop and UDOT will immediately consult with USFWS and the Utah Division of Wildlife Resources before resuming construction. Project employees will be informed of the presence of nesting golden eagles and cautioned to minimize disturbance.

Wildlife (Indirect)

The indirect impacts from the Selected Alternative to wildlife habitat include habitat fragmentation, barriers to movement, disturbance from increased traffic and noise, reduction of species density, and mortality from road kills. To minimize indirect impacts, mitigation measures to minimize habitat fragmentation caused by the Selected Alternative have been developed.

The desert in the project area has numerous dry washes, including some very large washes such as the Fort Pearce Wash and an unnamed wash along the northern part of the alignment. These washes are used by wildlife for migration. Hydraulic flow for these dry washes will need to be maintained by bridges, pipes, and box culverts. The mitigation measure for minimizing wildlife fragmentation consists of including some structures that wildlife can pass through. Review of the dry washes determined that up to 10 locations along the Selected Alternative could provide passages for wildlife. The locations are based on the initial design prepared for the EIS (Appendix A, Roadway Plans and Profiles) and include the following locations on those maps: sheet 2, station 2098+50; sheet 3, station 2285+00; sheet 3, station 2290+00; sheet 4, station 2360+00 at Fort Pearce Wash; sheet 5, station 2498+50; sheet 6, station 2563+50; sheet 9, station 2823+50; sheet 9, station 2834+50; sheets 14 and 15, station 1150+00; and sheet 15, station 1194+00. In the final design of the project, the following types or other suitable wildlife structures will be considered at the 10 locations:

- At the larger washes, 23-by-13-foot elliptical and 10-by-8-foot box culverts will be used for larger mammals such as coyotes, cougars, and mule deer.
- For smaller washes, wildlife culverts will be used. These structures are up to 4 feet wide and have raised dry ledges on each side of the central water channel that small mammals and reptiles can walk on. Ledges higher than 1.3 feet are the most effective.

The above passages were specifically designed as animal crossings. Animals also cross roads through existing drainage pipes, culverts, and other conduits not specifically designed for wildlife movement. Limited monitoring of these "non-wildlife-engineered" passages has shown that they can also be important linkages for local wildlife. The numerous dry washes, as well as a highway design that takes wildlife crossings into consideration, should provide appropriate measures to minimize wildlife habitat fragmentation caused by the Southern Corridor.

3.7 Threatened and Endangered Species (Page 4-96 of the Final EIS)

USFWS Biological Opinion

FHWA provided a Biological Assessment to USFWS on February 18, 2002, with a request for formal consultation. The Biological Assessment requested formal consultation based on a determination that the Southern Corridor was likely to adversely affect three federally listed endangered plant species: Holmgren milkvetch (*Astragalus holmgreniorum*), bearclaw poppy (*Arctomecon humilis*), and Siler pincushion cactus (*Pediocactus sileri*).

The Biological Assessment also requested USFWS's concurrence with a determination that the Southern Corridor would have no effect on the desert tortoise (*Gopherus agassizii*), Mexican spotted owl (*Strix occidentalis lucida*), southwestern willow flycatcher (*Empidonax traillii extimus*), and Shivwits milkvetch (*Astragalus ampullarioides*) and that the Southern Corridor may affect but was not likely to adversely affect the bald eagle (*Haliaeetus leucocephalus*), Virgin River chub (*Gila seminuda*), and woundfin (*Plagopterus argentissimus*).

USFWS provided FHWA, the lead federal agency, with a biological opinion for the Southern Corridor on September 26, 2002 (see Final EIS, Appendix C, Pertinent Correspondence, page C-15). The biological opinion determined that the Southern Corridor was likely to adversely affect the three federally listed plant species but would not jeopardize the continued existence of the species. USFWS concurred with the FHWA findings on the other species evaluated in the Biological Assessment.

USFWS and FHWA met on November 11, 2003, March 1, 2004, and April 9, 2004, to discuss reinitiating formal consultation for the Southern Corridor based on new data regarding the desert tortoise, Holmgren milkvetch, and bearclaw poppy. On October 18, 2004, FHWA requested to reinitiate formal Section 7 consultation with USFWS and submitted a Supplemental Biological Assessment to further evaluate the effects of the proposed project on the desert tortoise, bearclaw poppy, and Holmgren milkvetch for the following reasons:

- Potential desert tortoise burrows and tortoise signs were observed north of the proposed Southern Corridor at White Dome. The 2002 consultation did not consider the effects of the proposed project on the desert tortoise.
- Plant surveys in 2003 and 2004 identified the location and extent of Holmgren milkvetch and bearclaw poppy habitat near the proposed Southern Corridor alignment. Survey results were not available for the 2002 consultation.
- The 2002 consultation did not consider the indirect effects associated with highway-induced residential and commercial development.

The analyses and determinations for the Siler pincushion cactus, bald eagle, Virgin River chub, woundfin, Mexican spotted owl, southwestern willow flycatcher, and Shivwits milkvetch remain the same as those for the 2002 Section 7 consultation. Based on the September 26, 2002, and the

January 19, 2005, biological opinions (see Final EIS, Appendix C, Pertinent Correspondence, page C-34), USFWS concurred with the following determinations regarding the proposed project:

- **Likely to adversely affect:** Holmgren milkvetch, bearclaw poppy, Siler cactus, desert tortoise
- **May affect, but not likely to adversely affect:** Bald eagle, Virgin River chub, woundfin
- **No effect:** Mexican spotted owl, southwestern willow flycatcher, Shivwits milkvetch

The USFWS biological opinions dated September 26, 2002, and January 19, 2005, stated that the proposed project is not likely to jeopardize the continued existence of the Holmgren milkvetch, bearclaw poppy, or Siler cactus provided that the active conservation (mitigation) measures outlined in this Record of Decision and detailed in the biological opinions are taken.

The biological opinion also noted that the Southern Corridor, as proposed, is not likely to jeopardize the continued existence of the desert tortoise and is not likely to destroy or adversely modify designated critical habitat. Critical habitat for desert tortoise has been designated but does not occur in the study area. The study area is not considered high-quality desert tortoise habitat.

In addition, the conservation measures will minimize any adverse effects of the proposed Southern Corridor on the bald eagle, Virgin River chub, and woundfin. The project will not affect the Mexican spotted owl, southwestern willow flycatcher, or Shivwits milkvetch.

Plants

The Selected Alternative would result in impacts to two federally endangered (bearclaw poppy and Holmgren milkvetch) and one threatened (Siler cactus) plant species. Measures to minimize impacts to these species are listed below.

Bearclaw Poppy. The analysis in the Final EIS concludes that the proposed Southern Corridor would directly affect one bearclaw poppy plant within the proposed ROW and 6.2 acres of habitat at White Dome. The project would also result in indirect impacts to 8 acres of bearclaw poppy habitat. To determine the indirect impacts evaluated in the Final EIS, FHWA conducted an indirect impact analysis that demonstrated that much of the area would develop with or without the Southern Corridor. The analysis is contained in Appendix K, Indirect Impact Analysis, of the Final EIS.

After release of the Final EIS, UDOT initiated more-detailed planning to update the Interchange Justification Report required for the proposed first phase of the Southern Corridor project, which would be constructing the Atkinville interchange at I-15. Page 4-103 of the Final EIS notes that, although no direct impacts to the bearclaw poppy from the proposed road connecting the Atkinville interchange to the Sun River Parkway are anticipated based on the 30% design, this area will be re-evaluated along with the Atkinville interchange based on additional roadway design. This evaluation will include a detailed mapping of the bearclaw poppy habitat in this area. If any impacts to bearclaw poppy habitat in this area are anticipated based on further design, FHWA will consult with USFWS and implement the appropriate mitigation measures.

In May 2005 after release of the Final EIS, UDOT conducted more-detailed mapping of the bearclaw poppy habitat and refined the design of the proposed Atkinville interchange and road to the Sun River Parkway. Based on this updated information, it was determined that an additional 2.94 acres of bearclaw poppy habitat would be impacted. Of these 2.94 acres, 1.28 acres are considered direct impacts from the proposed Southern Corridor project (from I-15 to Sun River Parkway at Pioneer Road) and 1.66 acres are considered indirect impacts as a result of St.

George's proposal to widen the Sun River Parkway west of Pioneer Road if the decision is made to construct the Atkinville interchange. The additional impacts to bearclaw poppy habitat at the Atkinville interchange would increase the total amount of habitat impacted noted in the Final EIS from 6.2 acres of direct impacts to 7.48 acres and from 8 acres of indirect impacts to 9.66 acres.

On August 24, 2005, FHWA met with USFWS to discuss the changes in the project. USFWS concluded that the determination made regarding the bearclaw poppy in the January 19, 2005, biological opinion would not change as a result of the additional impacts, and therefore the biological opinion is still valid. As a result of the impacts of the Atkinville interchange and connecting road, the amount of mitigation noted in the Final EIS will increase as noted below. No other environmental impacts would result from the changes to the Atkinville interchange and connecting road to the Sun River Parkway.

Mitigation for the bearclaw poppy will consist of 3-for-1 preservation of habitat for direct impacts and 5-for-1 preservation of habitat for indirect impacts in the primary effects zone. These ratios will result in a total mitigation of 22.5 acres (18.6 acres in the Final EIS) for direct impacts and 48.3 acres (40 acres in the Final EIS) for indirect impacts. The 70.8 acres of total mitigation will be applied to the protection of the bearclaw poppy at White Dome, which is owned by the State of Utah.

White Dome should be the focal point of mitigation because it currently has no protection. Fencing White Dome has already been proposed in the tortoise habitat conservation plan and is the recommended mitigation for both bearclaw poppy and Siler cactus. Because bearclaw poppy could become established within the ROW before the proposed construction period (2006–2008), pre-construction surveys will be required to determine poppy occurrence.

The Warner Ridge populations of bearclaw poppy and Siler cactus are somewhat protected by being located in the BLM's Area of Critical Environmental Concern. In addition, the Warner Ridge population could be protected by limiting interchanges and reducing ORV access between the Red Hawk subdivision and Washington Dam Road.

A maximum 300-foot-wide fenced ROW will be used to protect habitat directly adjacent to the highway, and the highway footprint will be minimized at both White Dome and Warner Ridge to the extent practicable to limit direct construction impacts. Disturbance of natural vegetation within the ROW will also be limited to maintain native plant species composition and ground-nesting pollinators. Disturbed ROW will be revegetated with native shrubs and grasses indigenous to the project area. In addition, road signs will be posted in habitat areas within the ROW to notify UDOT maintenance crews to contact the UDOT Regional Environmental Coordinator before performing any activity. The environmental coordinator will ensure that no chemical spraying or grading activities that will damage habitat occur in this area unless they are necessary to maintain public safety.

In addition to the above measures, USFWS has the following conservation recommendations:

- FHWA should ensure that comprehensive evaluations are performed to determine the indirect effects to bearclaw poppy populations and habitat, particularly effects associated with highway-induced industrial, commercial, and residential development on South Block land near the proposed Southern Corridor. Interchange locations should specifically be evaluated to determine the increased accessibility and consequently the increased development of adjacent lands.
- FHWA should ensure full compensation for all direct and indirect effects associated with the Southern Corridor and highway-induced development (Appendix K, Indirect Impact Analysis, in the Final EIS contains the analysis regarding indirect impacts). Compensation should consider protecting or purchasing bearclaw poppy habitat in the area of influence of the proposed action, specifically the South Block land near the proposed Southern Corridor.
- Plant surveys should be conducted by a qualified botanist before highway construction occurs. Bearclaw poppy surveys should be conducted from April through June.
- FHWA should contribute to fencing the southern and western sides of White Dome to minimize the effects associated with increased accessibility to this recreational-use area.

In order for USFWS to be kept informed of actions that minimize or avoid adverse effects or that benefit listed species or their habitats, USFWS asked to be notified when conservation recommendations are implemented.

Holmgren Milkvetch. The proposed project would directly affect six to eight Holmgren milkvetch plants within the proposed ROW and 2.3 acres of habitat. The project would result in indirect impacts to 2 acres of Holmgren milkvetch habitat. Mitigation for Holmgren milkvetch would consist of 3-for-1 preservation of habitat for direct impacts and 5-for-1 preservation of habitat for indirect impacts in the primary effects zone. These ratios would result in a total mitigation of 6.9 acres for direct impacts and 10 acres for indirect impacts. The 16.9 acres of total mitigation will be applied to the protection of the Holmgren milkvetch in the South Block area or applied west of I-15 adjacent to milkvetch habitat on public land administered by BLM. If the area west of I-15 is used for mitigation, the ratio will be 6-for-1 for direct impacts and 10-for-1 for indirect impacts (Appendix K, Indirect Impact Analysis, in the Final EIS contains the analysis regarding indirect impacts).

A maximum 300-foot-wide fenced ROW will be used to protect habitat directly adjacent to the highway, and the highway footprint will be minimized to the extent practicable to limit direct construction impacts. Because milkvetch could become established within the Southern Corridor ROW before the proposed construction period (2006–2008), pre-construction surveys will be required to determine milkvetch occurrence.

Successful maintenance of Holmgren milkvetch within the ROW will require that the site is minimally disturbed by construction and maintenance activities. Holmgren milkvetch is particularly sensitive to invasive annuals, and an integrated weed-management program will be designed and implemented during and after construction. Disturbance of natural vegetation within the ROW will also be limited to maintain the native plant species composition and ground-nesting pollinators. Disturbed ROW will be revegetated with native shrubs and grasses indigenous to the project area. In addition, road signs will be posted in habitat areas within the ROW to notify UDOT maintenance crews to contact the UDOT regional environmental coordinator before performing any activity. The environmental coordinator will ensure that no chemical spraying or grading activities that will damage habitat occur in this area unless they are necessary to maintain public safety.

In addition to the above measures, USFWS has the following conservation recommendations:

- FHWA should ensure that comprehensive evaluations are performed to determine the indirect effects to Holmgren milkvetch populations and habitat, particularly effects associated with highway-induced industrial, commercial, and residential development on South Block land near the proposed Southern Corridor. Interchange locations should specifically be evaluated to determine the increased accessibility and consequently the increased development of adjacent lands.
- FHWA should ensure full compensation for all direct and indirect effects associated with the Southern Corridor and highway-induced development (Appendix K, Indirect Impact Analysis, in the Final EIS contains the analysis regarding indirect impacts). Compensation should consider protecting or purchasing Holmgren milkvetch habitat in the area of influence of the proposed action; specifically, the South Block land near the Southern Corridor.
- Plant surveys should be conducted by a qualified botanist before highway construction. Surveys for Holmgren milkvetch should be conducted in April or May.

In order for USFWS to be kept informed of actions that minimize or avoid adverse effects or that benefit listed species or their habitats, USFWS asked to be notified when conservation recommendations are implemented.

Siler Cactus. No Siler cactus habitat was noted within the Selected Alternative ROW, although there is the potential for the cactus to become established before construction. If cactuses are found, mitigation will consist of 1-for-1 replacement of habitat for direct impacts. Conservation will consist of purchasing and protecting in-kind habitat. Other mitigation will be the same as described for the above plant species. Because Siler cactus could establish itself in the ROW before the proposed construction period (2006–2008), preconstruction surveys will be required to determine cactus occurrence.

Wildlife

Although the burrowing owl, desert tortoise, and southwestern willow flycatcher were not found in the study area during field surveys, there is the potential for the species to become established before construction. Mitigation measures to minimize impacts to these species if they become established before construction are provided below. The USFWS biological opinion included mitigation measures to minimize impacts to the bald eagle roost associated with the 4800 West Alternative. However, the Selected Alternative would not be constructed near the roost, so no impacts are expected and implementation of mitigation measures is not required. Virgin River chub, woundfin, and other state sensitive fish species occur in the Virgin River, which is within the study area. Mitigation measures to minimize impacts to these species are provided below.

Burrowing Owl. Preconstruction surveys will be conducted in burrowing owl habitat. If burrowing owls are found, UDOT will consult with USFWS.

Virgin River Chub, Woundfin, and Other State Sensitive Fish. Impacts to the Virgin River itself are not anticipated, but implementation of BMPs is the recommended mitigation for the chub, woundfin, and other state sensitive fish species. BMPs will provide effective erosion and sedimentation control across the project area and will include an effective revegetation plan. Examples of BMPs that might be appropriate for inclusion in the design include revegetation and control of invasive plants, use of equipment mats in areas with temporary or short-term disturbance during construction, and silt fences of geo-textile fabric stapled to well-placed stakes

installed between the construction area and adjacent riparian areas as effective erosion and sedimentation control measures.

Desert Tortoise. USFWS has issued an Incidental Take Statement as part of the January 19, 2005, biological opinion for the desert tortoise. The measures described in the biological opinion (see Final EIS, Appendix C, Pertinent Correspondence, page C-34) are non-discretionary (that is, required) and must be undertaken by FHWA so that they become binding conditions of any grant or permit issued to UDOT and its contractors, as appropriate, for the exemption in Section 7(o)(2) of the Endangered Species Act to apply.

FHWA has a continuing duty to regulate the activity covered by the Incidental Take Statement. If FHWA (1) fails to assume and implement the terms and conditions of the Incidental Take Statement, or (2) fails to require UDOT or its contractors to adhere to the terms and conditions of the Incidental Take Statement through enforceable terms that are added to the permit or grant document, the protective coverage of Section 7(o)(2) could lapse. In order to monitor the impact of incidental takes, UDOT must report the progress of the project and its impact on the species to USFWS as specified in the Incidental Take Statement [50 CFR ' 402.14(i)(3)].

Due to the manner in which the tortoise reserve and Upper Virgin River Recovery Unit are managed under the Habitat Conservation Plan, Washington County Habitat Conservation Plan staff can fulfill the FHWA obligations outlined in the biological opinion to the extent that both FHWA and the County agree that is appropriate.

USFWS anticipates the following level of take (that is, harm to desert tortoises) from implementing the proposed action:

- Up to two desert tortoises could be taken directly (for example, moved out of harm's way or removed from their winter dens or burrows).
- An unknown number of desert tortoises could be taken indirectly through increased noise from operating heavy equipment during construction.

In the January 19, 2005, biological opinion, USFWS determined that this level of anticipated take is not likely to result in jeopardy to the species or to destroy or adversely modify critical tortoise habitat. USFWS believes that the following reasonable and prudent measures are necessary and appropriate to minimize the incidental take of desert tortoises authorized by the biological opinion:

- Implement measures to keep desert tortoises from being injured or killed by project-related activities.
- Implement measures to minimize destruction, loss, degradation, and fragmentation of desert tortoise habitat by project-related activities. (For more details, see Final EIS, Appendix C, Pertinent Correspondence, page C-34.)

To be exempt from the prohibitions of Section 9 of the Endangered Species Act, FHWA (and UDOT) must comply with the terms and conditions in the January 19, 2005, biological opinion, which implement the reasonable and prudent measures described above. These terms and conditions are non-discretionary (that is, required).

FHWA should also plan to include wildlife underpasses along the Southern Corridor. Tortoise habitat and movement at White Dome should be analyzed, and a wildlife crossing should be included at this location if appropriate.

Southwestern Willow Flycatcher. This species is not known to occupy the study area. However, there is a possibility that, before or during construction, the flycatcher could occupy habitat near the highway next to the Virgin River in a limited area at the north end of Warner Ridge. UDOT will resurvey this habitat during the 1-year period before construction. If flycatchers are found, FHWA and UDOT will consult with USFWS.

3.8 Historic, Archaeological, and Paleontological Resources (Page 4-120 of the Final EIS)

Cultural Resources

Under the Selected Alternative, 72 archaeological sites were identified of which 32 are eligible for the NRHP and 3 are potentially eligible. Of these 72 sites, 20 would be adversely affected (18 eligible and 2 potentially eligible sites). The adverse effects to these historic properties are taken into account by FHWA and UDOT through the executed Memorandum of Agreement with the State Historic Preservation Office (SHPO), the federal Advisory Council on Historic Preservation, affected agencies, and consulting parties identified under Section 106 (see Final EIS, Appendix H, Cultural and Paleontological Resources). Adversely affected eligible and potentially eligible sites will be subject to archaeological testing and/or full data recovery excavations. More accurate mapping in the field could demonstrate that certain sites are avoided by the project.

Archaeological monitoring of construction excavation as noted in the Memorandum of Agreement is recommended because of the potential for archaeological remains. The Shivwits Band of Paiutes will receive certain artifacts of their choice on permanent loan for exhibit at their Band office. The mitigation archaeologist will make a presentation on the project sites to Shivwits Band members and the Jennifer-Jack Dixie Chapter of the Utah Statewide Archaeological Society. The mitigation archaeologist will provide a tour for Shivwits Band members and will accept qualified volunteers from the Utah Statewide Archaeological Society to participate in the field investigations. The consulting parties will be notified of any discoveries during construction. Protective temporary fencing will be used to protect unaffected portions of historic properties.

In addition, FHWA and UDOT will continue to work with Native American government consulting parties to develop a plan for dealing with discoveries during construction and for acceptable treatment of the discoveries that is agreeable to all parties. The plan will be finalized before construction.

Paleontological Resources

Under the Selected Alternative, there would be impacts to four paleontological sites. To minimize impacts, the following measures will be implemented for each site identified:

- *42Ws195T.* A paleontologist will be onsite to monitor construction in the area to determine if additional tracks are present.
- *42Ws193PT.* A paleontologist will be onsite to monitor construction in the area to determine if additional tracks are present.
- *42Ws209V.* A paleontologist will monitor construction in the area. If the area will be covered with fill during construction, the area should be further explored first to uncover any additional fossils.
- *42Ws205T.* A qualified paleontologist should monitor construction excavation activities.

3.9 Hazardous Waste Sites (Page 4-127 of the Final EIS)

The ROW for the Selected Alternative includes areas near the Klein Properties development, and the scrap yard near Washington Fields. During construction, there would be potential to disturb these sites, which could affect worker safety and the environment.

UDOT policy is to conduct a Phase I Environmental Assessment before ROW acquisition. If a previously unidentified hazardous waste site is encountered, UDOT (or the construction contractor) will be required to complete a remedial work plan to clean up the site with approval from the Utah Department of Environmental Quality and/or EPA.

3.10 Visual Resources (Page 4-129 of the Final EIS)

The Selected Alternative would alter the viewshed for recreational users and the few residents at the north end of the study area. To minimize impacts, the highway ROW will be revegetated with native plants, which will help to soften the visual impacts of the highway and blend it into the landscape. The work will be completed as soon after construction as possible.

3.11 Construction Impacts (Page 4-136 of the Final EIS)

Construction would result in both temporary (short-term) and permanent impacts to air quality, water quality, cultural resources, and wildlife. Specific mitigation measures to address these impacts are discussed under each specific resource area above. Additionally, construction could impact the few residences along the Selected Alternative by interrupting traffic flow, increasing noise and light emissions, interrupting utility service, and causing visual impacts. To minimize these impacts, a thorough public information program will be implemented to alert the community of construction activities. Information will include work hours in areas where construction is needed to connect to the existing highways as well as alternate routes. Construction signs will be used to notify motorists about work activities and changes in traffic patterns. In addition, night and weekend work could be scheduled to shorten the duration of construction impacts as long as permit requirements are satisfied.

Impacts from lights used during nighttime construction will be minimized by aiming construction lights directly at the work area and/or shielding the lights to avoid disturbing nearby residences. Construction activities will be limited at certain times to protect threatened and endangered species. Utility agreements will be completed to coordinate utility relocation.

3.12 Permits/Certifications and Approvals (Page 4-141 of the Final EIS)

Permits and certifications required for the project include a Floodplain Certification from the local municipalities where floodplains will be impacted, a Nationwide 14 (Linear Transportation Crossings) permit from the U.S. Army Corps of Engineers, a stream alteration permit from the Utah Division of Water Rights, a stormwater discharge permit (Utah Pollutant Discharge Elimination System) from the Utah Division of Water Quality, an Air Quality Approval Order from the Utah Division of Air Quality, a Water Rights permit from the Utah Division of Water Resources, and, if necessary for fill material, a Material Site Right-of-Way permit from BLM. In addition, the Southern Corridor Final EIS will be adopted by BLM to fulfill National Environmental Policy Act (NEPA) compliance requirements pertaining to ROW grants across public lands. Additional permit requirements are discussed in Section 4.22 of the Final EIS (page 4-141).

USFWS has issued an incidental take statement for the desert tortoise as part of the January 19, 2005, biological opinion. Additionally, a Memorandum of Agreement has been executed to address effects on properties eligible for inclusion on the National Register of Historic Places (Final EIS, Appendix H, Cultural and Paleontological Resources, page H-20). A permit will be granted to UDOT by the SHPO to perform recovery mitigation on eligible archaeological sites affected by the project. An Archeological Resources Protection Act permit will be required for the archaeological mitigation on federal lands along with a state excavation permit.

UDOT is currently preparing an updated Interchange Justification Report for the Atkinville interchange at RP 2 on I-15 for FHWA review and approval.

4.0 Monitoring and Enforcement Program

Monitoring and enforcement of the above-described measures to minimize harm is a commitment of this Record of Decision. All of the mitigation measures listed above and identified in the Final EIS will be incorporated into the contract, plan, and specifications and will be monitored according to the construction/post-construction monitoring plans. Enforcement of the contract provisions and monitoring of the project are the responsibility of the selected UDOT Project Manager.

UDOT will preserve 16.9 acres of Holmgren milkvetch habitat and 70.8 acres of bearclaw poppy habitat as discussed in the biological opinion issued by USFWS (Final EIS, Appendix C, Pertinent Correspondence, page C-34) and as updated in Section 3.7, Threatened and Endangered Species, of this Record of Decision. The land associated with these mitigation measures will be obtained by UDOT in fee title using UDOT's power of eminent domain, as reflected in provisions such as Utah Statutes Section 72-5-103. UDOT has committed to FHWA and USFWS that, should the project obtain all necessary approvals, UDOT will obtain the mitigation areas in fee title. All mitigation property will be acquired before construction in the area of plant habitat.

To assist in establishing the mitigation sites, a Memorandum of Understanding (MOU) has been signed by UDOT, FHWA, USFWS, SITLA, the City of St. George, BLM, Washington County, and The Nature Conservancy. The MOU establishes the process for preparing a Management Plan for establishing protective preserves for the Holmgren milkvetch and bearclaw poppy in Washington County. The goal of this MOU is to develop an understanding between the agencies of the components to the Management Plan, a schedule for completion, and the responsibilities of each agency in preparing the Management Plan. Each agency agrees to collect information pertinent to its jurisdiction to help prepare the Management Plan.

Potential mitigation sites for the Holmgren milkvetch and bearclaw poppy have been identified on SITLA lands in Washington County south of St. George. Mitigation for the Southern Corridor project will consist of 70.8 acres for bearclaw poppy at White Dome and 16.9 acres for the Holmgren milkvetch in the South Block area. FHWA and UDOT, in cooperation with the agencies identified in the MOU, will work to identify the specific parcel boundaries and develop short-term and long-term management strategies that will be identified in the Management Plan. Specifically, the Management Plan will address the following:

- Description of the mitigation land to be acquired by UDOT in fee title
- Description of other potential land to be acquired by other agencies to expand the preserve boundaries beyond the mitigation area identified in the Final EIS

- Description of listed plant species and other sensitive species occurring on the lands to be managed including how and who will be responsible for monitoring of plant populations
- Management needs of the properties including but not limited to:
  - Control of public access and public uses (such as fencing, gates, and trails)
  - Short-term and long-term property maintenance
  - Short-term and long-term property manager and owner
  - Site restoration (for example, trash removal)
- Archaeological investigations required for ground-disturbing activities such as installing fences and establishing trails
- Identification of potential open-space buffers adjacent to the preserve lands
- Relationship of the Management Plan to the Washington County Habitat Conservation Plan and Recovery Plans approved through USFWS and partner agencies

Additionally, SITLA and USFWS will coordinate to identify other lands that might be obtained by other agencies such as BLM or non-governmental organizations such as The Nature Conservancy that could be used to expand the preserves beyond the mitigation identified for the Southern Corridor.

USFWS, working with the City of St. George, will take the lead in preparing the Management Plan because of their expertise with Holmgren milkvetch and bearclaw poppy. UDOT will purchase and fence the mitigation lands required for the Southern Corridor project before construction, which is expected to begin in 2006. To facilitate the spring 2006 construction date and provide UDOT with the necessary time to purchase and fence the mitigation lands, the Management Plan was drafted in August 31, 2005, with a Final Plan anticipated to be completed by December 2005.

FHWA will not approve construction of the Southern Corridor until UDOT has purchased the 16.9 acres of Holmgren milkvetch habitat and 70.8 acres of bearclaw poppy habitat required for mitigation.

In addition to the MOU, a Letter of Intent has been developed between SITLA, USFWS, The Nature Conservancy, BLM, and UDOT to implement the creation of land preserves for endangered plants located on SITLA's South Block property in Washington County. The Letter of Intent sets forth a mechanism for establishing a preserve for the bearclaw poppy in the area of White Dome, a preserve for the Holmgren milkvetch in an area South of Sun River and west of I-15, and a preserve for the Holmgren milkvetch in the central valley of the South Block south of the Fort Pearce Industrial Park. The document outlines specific parcels of land for the mitigation for the Southern Corridor project for the bearclaw poppy and Holmgren milkvetch and also identifies fence locations to be constructed as part of the preserves.

5.0 Final EIS Comments and Responses

Notice of the release of the Final EIS was published in the *Federal Register* on April 22, 2005. At the request of several commenters, FHWA extended the 30-day comment period an additional 30 days to provide a full 60-day public review period that ended on June 22, 2005. The Final EIS was distributed to federal, state, regional, and local agencies as well as to the public. In addition, copies were placed in local libraries for use by the general public. A notice of availability of the Final EIS was placed in local and regional newspapers and on the project Web site. Provided below are the agency and public comments provided on the Final EIS during the 60-day review period along with FHWA's responses.

Comment Number	Commenter	Comment and Response
A-001-01	Steven J. Onysko, Utah Division of Drinking Water	*Comment:* Found no relevant issues in the document. *Response:* Comment noted.
A-002-01	Lowell Elmer, Dixie Metropolitan Planning Organization	*Comment:* The Preferred 2800 West Alternative has the support of the Dixie Metropolitan Planning Organization. *Response:* Comment noted.
A-003-01	Kenneth Sizemore, Five County Association of Governments	*Comment:* We support the Preferred Alternative described in the Final Environmental Impact Statement for the Southern Corridor. *Response:* Comment noted.
A-004-01	Dave McNeill, Utah Division of Air Quality	*Comment:* The project may require the following permits and approvals: • Approval Order (AO) for rock crushing, asphalt plants, or concrete batch plants • Notice of Intent (NOI) and AO for review according to Utah Air Conservation Rule R307-401 and R307-205-3 *Response:* All applicable permits and approvals will be obtained by UDOT or their agent prior to each phase of construction.
A-005-01	Larry Svoboda, U.S. Environmental Protection Agency	*Comment:* We would like to acknowledge the superior quality of this document in terms of disclosure information. *Response:* Comment noted.
A-006-01	John Harja, Utah Governor's Office of Planning and Budget, Resource Development Coordinating Committee	*Comment:* The Utah Division of State Parks will support the Preferred Alternative, the 2800 West Alternative for this project. The Division, however, would prefer any of the other alternatives studied in the EIS to the 2800 West due to the recreation and managerial impacts to the state park and the surrounding area. The Preferred Alternative impacts Sand Mountain Recreation Area to a greater degree than the other alternatives. *Response:* A meeting was held with the Division of State Parks and Recreation on June 13, 2005, to discuss the proposed Southern Corridor. It was determined that the Southern Corridor could be planned with the Sand Hollow State Park and that the 2800 West Alternative did follow the alignment of the commuter road identified on the park's development plans. The Division of State Parks noted that the project would not impact their ability to manage recreational activities and would not use any recreational facilities or lands. The Division of State Parks provided a letter to FHWA on June 17, 2005, stating that if the mitigation as described in the Final EIS is implemented, the Southern Corridor would meet the intent of the commuter road that was envisioned in the recreation plan for Sand Hollow State Park.
A-007-01	Grady L. McNure, U.S. Army Corps of Engineers	*Comment:* You will need a permit to discharge dredged or fill material in waters of the United States. If the project does not qualify for the enclosed copies of nationwide general permit number 14 or Regional General Permit number 40, then you will need an individual Department of the Army permit. *Response:* All applicable permits and approvals will be obtained by UDOT or their agent prior to each phase of construction.
P-001-01	Fred and Cathy Kruger	*Comment:* Sound walls on the west side of I-15 near Bloomington Ranches [are] requested. *Response:* The only improvements to I-15 within the scope of this project are in relation to the construction of the Atkinville interchange. This comment is outside the scope of this study. This comment will be forwarded to UDOT for their review.
P-001-02		*Comment:* Consider repaving [I-15] with rubberized paving. *Response:* See response to comment P-001-01.

Comment Number	Commenter	Comment and Response
P-001-03		*Comment:* Consider a frontage road on the east side of I-15 between exit 4 and exit 2. *Response:* See response to comment P-001-01.
P-002-01	Anthony J. Frates, Utah Native Plant Society	*Comment:* Request for 60-day extension of the public comment period. *Response:* The comment period was extended 30 days for a total of a 60-day review period.
P-002-02		*Comment:* There are fewer than 45 days for response. *Response:* NEPA requires a 30-day public comment period for final environmental impact statements.
P-003-01	Mark A. Clemens, Utah Chapter, Sierra Club	*Comment:* Request for 60-day extension of the public comment period. *Response:* The comment period was extended 30 days.
P-003-02		*Comment:* We are working from the CD [compact disc] that is not so user friendly. *Response:* A printed copy and an additional CD of the Final EIS was provided to the Sierra Club on May 18, 2005.
P-004-01	Voin Campbell	*Comment:* Please be advised of my total support for the project as proposed. Anything you can do to bring about the completion of the project at the earliest possible date will be greatly appreciated. *Response:* Comment noted. Only the first phase of this project has funding allocated for construction. Subsequent phases of the project will be constructed as funding is identified.
P-005-01	Thomas B. Hirschi, Mayor, City of Hurricane	*Comment:* We support and applaud your recognition of 2800 West as the preferred route. It is our intention to take into account the EIS for this area of our city. *Response:* Comment noted.
P-006-01	Richard W. and Lynn R. Oehmann	*Comment:* We need to have an appropriate access off the Southern Corridor, which would give access directly to the airport terminal. *Response:* This document is a planning-level study. Currently, funding has been identified for the first phase of construction only, which includes the Atkinville interchange at I-15. The Southern Corridor would be initially constructed as a limited-access facility with at-grade intersections and, when traffic warrants, upgraded to a facility with interchanges. The exact location of accesses or interchanges would be based on future development and must be justified based on traffic demand. Additional considerations such as economic benefits or impacts of access locations and topographical constraints would be taken into consideration when a final decision regarding interchange locations is made. For the purposes of estimating a project cost, access locations were included in this document based on the existing and planned roadway network, consultation with local city planners, and assuming approximately 1 to 3 miles of separation between each interchange access. An access location southeast of the airport was included in this document based on the City of St. George's long-range transportation master plan. The final decision regarding access locations on the Southern Corridor will be made during final design of each phase of the project as funding is identified.
P-006-02		*Comment:* This is prime developable flat land next to the airport, as opposed to other exits that are currently designated by the City of St. George that are on topographically challenged property. *Response:* See response to comment P-006-01.
P-006-03		*Comment:* These designated exits are along a very long corridor with no access between Leucadia on the south and the Red Hawk project to the north. There is a distance of several miles between these two points. We believe it would be unfair not to allow access off of that road. *Response:* See response to comment P-006-01.

Comment Number	Commenter	Comment and Response
P-006-04		*Comment:* There has already been an easement corridor planned by the property owners and the properties and various owners laid out, with the intention of coordinating with a reasonable plan with the Southern Corridor, including reserving an appropriate right-of-way for the Southern Corridor. *Response:* Comment noted. The Southern Corridor will require a 300-foot right-of-way for construction. The proposed corridor alignment was developed in consultation with federal and state resource and land planning agencies, the cities, developers, and the public.
P-006-05		*Comment:* These properties need to have their own separate flow of traffic tied to the corridor without having to run way around the airport. This would greatly reduce the ability of these properties to generate significant tax dollars for the community. *Response:* See response to comment P-006-01.
P-006-06		*Comment:* If it is felt that there are too many accesses, an exit at this location would be better than the one that is currently planned due to topography. There is certainly enough distance between these accesses that multiple accesses could be allowed, but if you are looking for a main entrance to the airport, ours would be clearly superior because of the terrain. *Response:* See response to comment P-006-01.
P-007-01	Scot Peterson	*Comment:* I am concerned that there is not a planned interchange at the central location of this development area (planned commercial development east of the proposed airport). The proposed interchange southeast of the airport seems to be located on land topography of rough (steep) terrain with little opportunity to capitalize on commercial development around it. The area central to the airport, and the commercial site is on flat ground with a much higher development and revenue-generating potential. *Response:* See response to comment P-006-01.
P-007-02		*Comment:* There is a long corridor of right-of-way running parallel to the runway which allows no access to the airport nor is there an entrance to, or exit from, the beltway. It seems the interchanges are located in unlikely locations and, as currently proposed, will minimize the potential revenue generation for the commercial land and airport coming to the area. *Response:* See response to comment P-006-01.
P-007-03		*Comment:* My property has designated right-of-way easements already in place with the intention of coordinating with a reasonable plan for the Southern Corridor. There is a reserved right-of-way for the corridor as well as to the airport. It seems to me the easier the access to commercial land, the higher the use resulting in higher sales tax revenue generated for municipalities. *Response:* See response to comments P-006-01 and P-006-04.
P-008-01	John W. Boyer	*Comment:* Of greatest concern to me is the absence of an interchange on the beltway due east of the mid-point of the airport. (map on file). *Response:* See response to comment P-006-01.
P-008-02		*Comment:* My information is that the Leucadia noted interchange is in a topographically impaired area, lower than the airport location and surrounding land which is relatively flat. *Response:* See response to comment P-006-01.
P-008-03		*Comment:* I am further informed the Leucadia interchange was proposed as part of a compact between the adjacent property owner and the City of St. George to benefit the owner's property value and not necessarily to benefit the traveling public. *Response:* Comment noted.

Comment Number	Commenter	Comment and Response
P-008-04		*Comment:* The area surrounding the airport site at this point is generally expected to be for commercial purposes including industrial, retail, and light business professional. The core of these areas is along the eastern edge of the airport site. One would presume the best location for an interchange would be closest to the nucleus of these uses and in an area where the lessened expenses of construction would be on level land. *Response:* See response to comment P-006-01.
P-008-05		*Comment:* If the interchanges are not located in the area of greatest use, the purpose of the beltway will be defeated as additional roadways are required to route people where they want to go. *Response:* See response to comment P-006-01.
P-008-06		*Comment:* The prior owner of my property dedicated a right-of-way to give ingress and egress from the airport from an interchange directly in line with the right-of-way. *Response:* Comment noted. See response to comments P-006-01 and P-006-04.
P-009-01	Carol A. Corbett	*Comment:* The plan for the corridor does not show an interchange near the new airport, instead having one near Warner Valley Road and another at the southeast corner of the airport in what appears to be rough terrain. There is a considerable stretch of the corridor to the east of the airport where the terrain is flat. This location would be more conducive for airport traffic and also for businesses as commercial ventures move into the area. *Response:* See response to comment P-006-01.
P-010-01	Dale Roesener	*Comment:* The Grand Circle Ranch's property has a future land use designation of airport-supporting business pads, airport vicinity industrial, and mixed-use commercial-residential. Exhibit 1 included in the draft shows an exchange to the south but nothing at the proposed commercial development. Given the designation as a major commercial center, it seems most appropriate that the exchange be located in the commercial area. *Response:* See response to comment P-006-01.
P-010-02		*Comment:* The proposed interchange to the south is positioned on topographically challenged terrain and a wash area. This will result in increased interchange cost and reduced commercial opportunity. *Response:* See response to comment P-006-01.
P-010-03		*Comment:* The property at Grand Circle Ranches already has an easement corridor laid out with the intention of coordinating a reasonable plan with the Southern Corridor. *Response:* See response to comments P-006-01and P-006-04.
P-010-04		*Comment:* The highest and best use for the interchange is on flat land in a commercial area that will create the most potential tax receipts to the beneficial city(map on file). *Response:* See response to comment P-006-01.
P-011-01	Jeff Kline	*Comment:* I believe it is safe to say that the majority of private landowners in this area endorse the Southern Corridor with the design updates contained herein. *Response:* Comment noted.
P-011-02		*Comment:* The property located directly south of the replacement airport (commonly referred to as the Leucadia parcel) primarily supports a master-planned residential golf course community. *Response:* See response to comment P-006-01.
P-011-03		*Comment:* It is further noted that the location of the proposed corridor exit in this area is situated on undulating or topographically challenged property not suitable for commercial development. This region is also part of the Fort Pearce Wash and drainage area. *Response:* See response to comment P-006-01.

Comment Number	Commenter	Comment and Response
P-011-04		*Comment:* A secondary runway, which has been omitted from the planning process, necessitated the original design for the exit in this location. As you can see on the attached Airport Vicinity Land Use Plan (on file)the area that was once occupied by the secondary runway has been correctly replaced with upscale business development, including aviation-related industrial and commercial services. *Response:* Comment noted. See response to comment P-006-01.
P-011-05		*Comment:* The current proposed access is not only hindered by certain physical constraints, but rather there are additional environmental issues raised with the proximity to the Fort Pearce Wash. *Response:* See response to comment P-006-01. The environmental impacts and associated floodplain of the Fort Pearce Wash were considered in the EIS. The Southern Corridor would not impact the floodplain of the wash.
P-011-06		*Comment:* The greatest concern relates to the missed economic opportunities incurred by placing the exit in the wrong location. This is with respect to an overall transportation plan and exit system that supports your prime future economic development acreages. *Response:* See response to comment P-006-01.
P-011-07		*Comment:* Inclusive of the parcels are major rights-of-way for access. The north/south right-of-way should coincide with your alignment for the Southern Corridor. The east/west right-of-way serves as the central arterial road system for the majority of the future airport properties. *Response:* Comment noted. See response to comment P-006-04.
P-011-08		*Comment:* [The suggested alternative] Eliminates the physical constraints from topographically challenged lands. *Response:* See response to comment P-006-01.
P-011-09		*Comment:* [The suggested alternative] Decreases adverse environmental impacts to the Fort Pearce Wash and surrounding properties. *Response:* See response to comments P-006-01 and P-011-05.
P-011-10		*Comment:* [The suggested alternative] Maximizes the overall future economic benefits and potential revenues with regards to Washington County's present and long-term development plans. *Response:* Comment noted. See response to comment P-006-01.
P-012-01	Richard T. Pratt and Ed Burgess	*Comment:* We endorse and adopt by reference the comments previously made by Jim Ward of the Leucadia Corporation in their public comments of May 29, 2003. *Response:* Comment noted.
P-012-02		*Comment:* Based on the study's numbers, a LOS [level of service] service level of D or better can be achieved with a five-lane arterial, similar to SR 9 through the year 2030. It is likely given growth patterns that a LOS level of C or better will be maintained beyond 2020. The exception to this conclusion is the section of the Southern Corridor between the Atkinville interchange and the River Road exit. *Response:* The Selected Alternative is a limited-access freeway. The level of service (LOS) provided in the EIS is based on such a facility in 2030. Travel demand modeling shows that, by 2030, regional growth in population and associated travel would require a limited-access facility to meet the project's purpose and need of providing a regional facility. An arterial with unlimited access or stop lights similar to SR 9 would increase congestion, which would result in a poor level of service. The purpose of the corridor is to provide a regional transportation system with limited access to improve mobility; it is not intended to be a local arterial, which would be for local traffic.

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P-012-03		*Comment:* We endorse the notion that the Southern Corridor should obtain and hold sufficient right-of-way width to accommodate the growth of traffic volumes over time. It does seem inappropriate, however, under the present planning horizon, to contemplate that the entire Southern Corridor will be a rural freeway with grade-separated interchanges. At least two factors mitigate against this. First, at a cost of $10–$15 million per interchange, this approach would be outlandishly expensive and the facility underutilized over the planning horizon, through 2030. Second, the spacing of such interchanges would place a massive burden on land owners and local municipalities to provide a network of feeder and access roads. *Response:* As noted in Chapter 2, Alternatives, the proposed Southern Corridor would start as a limited-access, two-lane facility with at-grade intersections. The proposed project would not develop into a four-lane, limited-access facility with interchanges until warranted by traffic demand. The timing of full build-out would depend on the rate of growth in the project area, but build-out is expected by 2030. To preserve the appropriate amount of right-of-way for the future, the ultimate build-out was analyzed in the EIS. Because the area is not currently developed, the actual number of, location of, and distance between the final interchanges identified in the EIS could change based on final growth and development patterns.
P-012-04		*Comment:* We believe that, with the acquisition of reasonable right-of-way, the Southern Corridor can develop gracefully and efficiently for many decades. The level of the facility and the access allowed should be consistent with the economic development occurring in the study area. *Response:* See response to comment P-012-03.
P-012-05		*Comment:* We believe that *smart growth* concepts should be employed. As an example of this, our master planning with the City of St. George incorporates a town center with a pedestrian-friendly layout. We intend to master-plan and design in a manner to minimize the need [for] and impact of automobile travel. *Response:* See response to Draft EIS comment C-32.3 (Final EIS page 11-99).
P-012-06		*Comment:* We believe the evidence supports construction of a rural freeway-level facility from the I-15 interchange to River Road (point A on the exhibit) (map on file). *Response:* See response to comment P-012-02.
P-012-07		*Comment:* We believe that beyond River Road the planning and design should provide for a five-lane facility similar to State Route 9 near Hurricane. *Response:* See response to comment P-012-02.
P-012-08		*Comment:* The corridor should provide for three exits on the Desert Canyon (Leucadia) property, including one at the border with SITLA (point B), one in the interior of the property (point C), and, as planned, the main exit to the airport (point D), as described in the City's master plan. *Response:* See response to comment P-006-01.
P-012-09		*Comment:* When we purchased the property in early 2004, Leucadia assigned its position in the Memorandum of Understanding (with the City of St. George) to the Desert Canyons group, and the City of St. George acknowledged the assumption. This process represents the best practice in terms of planning far in advance of development, keeping in view the changing needs over time. This planning process resulted in a master land use plan for the property incorporating an interface with the Southern Corridor. Any significant changes from that land use and transportation plan and our MOU greatly compromise the value to the City and the land owner and sends a very dire message to local governments as to the level of cooperation they can expect in support of their planning efforts. *Response:* Comment noted. See response to comment P-006-01.

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P-013-01	Joseph Perrin	*Comment:* The future classification of the roadway will determine the appropriate spacing of the accesses. Further, the limited-access nature of this facility indicates that the proposed access locations will likely become the only access locations allowed to this roadway. *Response:* See response to comments P-006-01 and P-012-02.
P-013-02		*Comment:* The transportation modeling indicated that approximately 2,950 ADT [average daily traffic, or average number of vehicles per day] would utilize the Southern Corridor as a bypass route indicating that this roadway is primarily to open this area to development. Therefore, a roadway that is conducive to supporting the development in the area best reflects the roadway need and makes the most sense economically. Resolving this issue is not simply preference but should reflect the higher-level purpose for the facility and the cost to taxpayers. *Response:* See response to comments P-006-01 and P-012-02.
P-013-03		*Comment:* Table 1.3-2 on page 1-14 of the DEIS [Draft EIS] indicates that a five-lane arterial has a LOS D capacity of 28,000 to 32,500 ADT. According to Table 2.1-1, page 2-9, once east of River Road, the 2030 projected traffic is more conducive to a five-lane arterial than a freeway if designing the roadway to operate at a LOS D or better. In many sections, the five-lane arterial provides a LOS C 2030 operation. However, since the table indicates that the Southern Corridor will have a capacity of 89,000 ADT, this clearly indicates that the assumption is the Southern Corridor will be a freeway. Therefore, the Southern Corridor will operate at between 18% and 35% of its capacity for the majority of the corridor indicating that a freeway provides excess capacity relative to the demand. In fact, the freeway alternative provides for 3 to 5 times more capacity than what is projected to be necessary. This indicates that the smaller, cheaper, and less intrusive five-lane highway may be more appropriate. *Response:* See response to comments P-006-01, P-012-02, and P-012-03.
P-013-04		*Comment:* UDOT's response to the Leucadia and A-Trans comments to the Draft EIS [see pages 11-107 and 11-108 of the Final EIS] indicates that since the area is not developed, the location of the final interchanges identified in the EIS may change based on final growth and development patterns. Good land use development predetermines these locations so the infrastructure and planning for the support roadways can be developed with a global perspective in mind. Proper planning does predetermine connection points to a limited-access highway; otherwise, as development occurs, proper intersection spacing may be compromised. I see nothing in the EIS that indicates other connection points except the proposed locations. Based on Figure 4-3 of the EIS, there is proposed a single access point to the entire 2,400 acres at the interchange location 4, the Airport Road. The planning of the City of St. George, Desert Canyons, and SITLA has always contemplated an exit at the border of SITLA and Desert Canyons which has been moved to the west in the Final EIS. *Response:* See response to comment P-006-01.
P-013-05		*Comment:* A five-lane arterial, similar to SR 9, does accommodate the projected 2030 traffic on the [Southern Corridor] east of River Road continuing to SR 9 with a design LOS D as specified in the EIS and in many areas a LOS C is possible with this five-lane facility. *Response:* See response to comments P-006-01 and P-012-02.
P-013-06		*Comment:* The agreement between the City [of St. George] and Desert Canyons does provide for a minimum of three access points. The nature of a limited-access highway is that it typically receives federal funds and the access locations are predetermined prior to construction. Our understanding is that adding additional location after the roadway is constructed usually requires breeching limited-access (LA) or non-access (NA) lines which requires purchasing access rights and receiving the permission of both UDOT and the Federal Highway Administration (FHWA). We view this as highly unlikely once the roadway is constructed. *Response:* See response to comment P-006-01.

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P-013-07		*Comment:* The Southern Corridor must be classified by UDOT as a Category 1 through 9 roadway based on UDOT Administrative Rule R930-6. *Response:* The Southern Corridor as planned would be a freeway by 2030. The freeway would be classified as a Category 1 roadway as defined by UDOT Administrative Rule 930 6, Accommodation of Utilities and the Control and Protection of State Highway Rights-of-Way. Proposed access locations in the Final EIS were based on accommodating this 2030 designation.
P-013-08		*Comment:* Ideally, a corridor agreement will be established for the Southern Corridor that identifies the future access locations, as this is UDOT's preferred direction on rural highways so the corridor is developed with appropriate access management in mind. An example of a similar UDOT highway facility that is developed in a rural area with an access corridor agreement is SR 36 in Tooele County. This roadway is planned with at-grade signalized intersections spaced at 1-mile intervals. The roadway is being upgraded to a five-lane facility but is still currently a three-lane road from SR 138 to Tooele. In 2003, UDOT's publication *Traffic on Utah Highways* indicated that this roadway carries between 27,000 and 31,000 ADT on this section of SR 36. UDOT has further preserved a total of only 200 feet of right-of-way to provide an ultimate build-out of a seven-lane facility that will accommodate a projected 70,000 ADT. Therefore, other alternatives to freeways are available as indicated by several other UDOT examples throughout the state. *Response:* See response to comments P-006-01 and P-012-02.
P-014-01	Jeffery Appel Representing Calvin Lowe	*Comment:* The need for and the reasons articulated in support of providing a "regional transportation system" between Hurricane, St. George, and Washington City do not match what appears to be the underlying purpose of this project—providing convenient access to three unrelated projects in the area. Therefore, the stated "need" for a "regional transportation facility" does not conform to what appears to be the actual purpose of the project. As such, the resulting analysis of alternatives and environmental impacts arising are confused from the outset. In essence, the Final EIS's demonstration of need is best expressed as "we need this project because we want the project." Need may not be fairly expressed in terms of a specific project as it is here. If that were the case, only a specific project would need the need, which approach is impermissible under NEPA. *Davis v. Mineta*, 302 F.3d 1104 (10th Cir. 2002). *Response:* The purpose and need for the Southern Corridor project is described in detail in Final EIS Chapter 1, Purpose of and Need for Action (Final EIS page 1-1). The purpose of the project is to provide a regional transportation facility between St. George, Washington City, and Hurricane that would complement local land use plans. The project would also accommodate areas of future growth, reduce some traffic on the existing and future network of arterial and city streets, and improve conditions in areas already developed. The project is needed because the southern area of Washington County lacks a regional facility (as shown in local land use and transportation plans) to support expected growth and development and to support the existing transportation system which is currently limited because of topographic and environmental constraints. Because many of the planned projects in the area (such as the St. George replacement airport and developments) are in the local land use and transportation plans and have no access roads, they were considered in project decisions and as part of the project need. However, the overall need considered was the need for a regional system that was identified in local and regional land use and transportation plans, not the need for specific projects.

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P-014-02		*Comment:* In addition, private development projects appear to have had an undue influence on the proposed project. Throughout the Final EIS, "need" also appears to be based on the "needs" of future private development. This is evidenced by statements in the Final EIS that portions of the corridor may not be built at all depending upon the amount of future development that actually takes place—"the decision may be to build only that part of the corridor required to meet projected transportation demand at the time of the decision, with the remainder of the corridor being preserved until construction is warranted by travel demand." Final EIS p. 1-1. Statements such as these are found repeatedly in the Final EIS and serve to discredit the existence of any alleged "need" to create a "regional transportation facility." In point of fact, there is little factual basis presented to support the conclusion that the current regional transportation facilities—I-15 and ST-9 [SR 9]—are not doing their job, or that simple expansion thereof will be sufficient, in combination with anticipated expansion of local facilities. The fact that certain persons, entities, or agencies "want" another facility does not mean one is "needed". *Response:* The EIS is a long-range planning document with a build-out year of 2030. FHWA expects that, by 2030, the project would be needed based on projected population and employment numbers in the region and future development plans. The population is expected to increase from 66,993 in 2000 to 208,641 by 2030 with most of the growth occurring south of I-15 and SR 9. Initially, only part of the project would be built to meet the initial need, which would likely be between the St. George replacement airport and I-15. As growth continues, other sections would be needed and constructed. It would not be prudent to build the entire project immediately, but it would make sense to preserve the corridor so that future plans and growth can be accommodated in 2030 when the entire project is needed.
P-014-03		*Comment:* The Final EIS attempts, but fails, to distinguish the purpose of providing access to existing and planned developments with the need to provide a regional transportation facility by focusing on alleged problems with arterial roads in St. George, Hurricane, and Washington City. For example, the Final EIS states "as demand grows in the southern area of the cities without a regional transportation facility, deficiencies in these roadways will be magnified and will likely result in increasingly delayed travel and higher accident rates." Final EIS p. 1-15. However, the construction of the Preferred Alternative within the corridor is not going to reduce traffic on some arterial roads, and road improvements to arterial routes in many cases will be required regardless of whether or not the Preferred Alternative is built. This is evidenced by statements in the Final EIS that existing transportation infrastructure in this area is inadequate to meet the needs of existing and planned development. Final EIS p. 1-23. *Response:* See response to Draft EIS comment C-32.1 (Final EIS page 11-98) regarding congestion on local arterials and how traffic would be reduced in the future. Also note that the Southern Corridor would not alleviate the need for additional expansion of the local arterial network. As new developments are constructed south of I-15, arterials to those developments would need to be constructed or widened given the current limited road network. The Southern Corridor would provide the regional connectivity needed to support the overall transportation system.
P-014-04		*Comment:* The Final EIS fails to reconcile the ambiguity created by the statement referenced above and instead relies on project compatibility with seven local plans that support the implementation of the Southern Corridor as a basis for the Final EIS p. 1-23. Even if true, compliance with local planning initiatives does not demonstrate a valid "need" for the corridor; it is simply part of a wish list. *Response:* See response to comments P-014-01 and P-014-02.

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P-014-05		*Comment:* Only three alternatives were developed in the Final EIS in addition to the No-Build Alternative. The build alternatives—4300 West, 3400 West, and 2800 West—are identical from the proposed I-15 interchange to an area about 4 miles south of SR 9. At this point the alternatives connect to SR 9 at three different locations. Each of these locations was selected based upon the location of planned development. Final EIS p. S-2. Oddly, only one location was studied to connect the corridor to I-15. Final EIS p. 2-19. *Response:* As part of the initial screening process, potential regional alignment options that would meet the project's purpose and need were evaluated. As discussed in Final EIS Section 2.1.4.2, Development of Alignment Alternatives (Final EIS page 2-16), many factors were considered in the alignment process including environmental considerations, land use and transportation plans, and engineering considerations. The alignments and location on I-15 were developed during a Southern Corridor partnering session that included federal and state resource and land agencies, local and county officials, and the public. As noted in Final EIS Section 2.1.4.4 (Final EIS page 2-19), to avoid sensitive plant habitat, one suitable location was identified for the Southern Corridor connection to I-15 near the Atkinville Wash between areas of bearclaw poppy and Holmgren milkvetch habitat. Other locations on I-15 north or south of the proposed Atkinville interchange would have resulted in more impacts to sensitive plant habitat (see Final EIS Figure 2-6, page 2-49). In addition, a location to the south would have engineering constraints with the Atkinville Wash (a major regional drainage feature) and would have conflicted with the Utah port of entry located less than a mile from the proposed Atkinville interchange. Areas to the north had not only plant habitat impacts but topographical limitations as well.
P-014-06		*Comment:* As stated above, the "alternatives" rely extensively on accommodation of two major residential developments, the replacement airport, the recreation area, and the reservoir rather than focusing on the alleged purpose and need of providing a regional transportation corridor. In this vein, the Final EIS also failed to fully and adequately analyze a smart growth or mass transit alternative and rejected other alternatives that would satisfy the purpose and need for the project, simply because they may impact private developments more than the Preferred Alternative. While alternatives need not be studied if they are remote, speculative, impractical, or ineffective, nothing in the document justifies the failure of the Final EIS to study these reasonable alternatives in depth. *Davis v. Mineta*, 302 F.3d 1104, 1121 (10th Cir. 2002). *Response:* See response to Draft EIS comment C-32.3 (Final EIS page 11-99).
P-014-07		*Comment:* The Final EIS also fails to adequately justify why other alternatives were considered and later dismissed. For instance, "Alignment A" was not carried forward because it would impact a private development, including the proposed St. George replacement airport, and was "less compatible with development places for the Klein and Leucadia properties." Final EIS p. 2-19. Similarly, "Alignment B" was dismissed because it was 0.5 of a mile out-of-direction travel and impacted Leucadia's property. *Id.* [Final EIS p. 2-19.] However, the alternative known as "Modified A" was carried forward and the Final EIS states that it was the alignment most supported by both Leucadia and Klein because it best fit the developments' conceptual plans. *Id.* [Final EIS p. 2-19.] Thus, it appears some of the alternatives were improperly rejected and were dismissed in a conclusory and perfunctory manner. Quite simply, if the real purpose of the project, as advocated by the agency, is to provide a regional transportation facility rather than providing access to these developments, these alternatives should have been carried forward. *Response:* As discussed in Final EIS Section 2.1.4.3, Alignment Alternatives Evaluated (Final EIS page 2-18), many factors were considered in developing the alternatives. The options mentioned in the comment were not alternatives but small changes in the alignment that were considered. The environmental impacts between alignments A, Modified A, and B were the same, so other factors were considered such as safety zones at the proposed St. George replacement airport, length of the alignment, and development plans. As noted in the Final EIS, Alignment A was within the airport safety zones and Alignment B was 0.5 mile longer. Therefore, Modified A was selected because it did not impact the airport operations and was the shortest in length. The alignment also best conformed to local development plans. Carrying each alignment option forward as a separate alternative would have resulted in the same conclusion with no difference in

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		environmental impacts.
P-014-08		*Comment:* Alignment "C" was eliminated from further study because it was one mile longer in length; required more slope, cut and fill; and would conflict with the Sand Hollow Reservoir, since the road alignment is within the lake boundary. Final EIS p. 2-20. However, after studying Figure 2-5, it becomes apparent that Alignment "C" did not necessarily have to pass through the Sand Hollow Reservoir lake boundary, but could have been located just to the north of the boundary, south of the Dixie Springs Development, and then could have passed to the east of that development terminating in an area around 3000–3200 West. This option could have eliminated the majority of impacts to Sand Hollow Reservoir, Dixie Springs Development, and Outlaw Ridge Development. More importantly, it would completely avoid the significant impacts to my clients' lands that are created by the Preferred Alternative. The Final EIS, however, fails to demonstrate why an alternate alignment near Alignment "C" was found to be unreasonable or not analyzed. This is just one example of an alternative that was not adequately dealt with in the Final EIS. Such an alternative appears to be quite reasonable and could have minimized environmental impacts while satisfying not only the alleged purpose and need of providing a regional transportation corridor, but also would have supported what appears to be the real purpose for the project—providing access to the reservoir, airport, and recreation area. *Response:* The EIS has evaluated a reasonable number of alternatives within a reasonable range of alternatives. Certainly, a full range of alternatives must be examined under NEPA; however, not every alternative or alignment must be analyzed. Between 4300 West and 2800 West, three alternatives were analyzed for connection with SR 9. These alternatives were developed in coordination with federal and state agencies, local and county officials, and the public. Although initially four alignments were considered in this area, the alignments that best minimized impacts and met the project's purpose and need were carried forward for detailed study as alternatives. Within the 3 miles from 4300 West to 2800 West, additional connections to SR 9 could have been considered, but instead a reasonable range of alternatives was developed based on the factors discussed in the EIS such as minimizing environmental impacts, relocations, and impacts to platted developments. Alignment C was eliminated for several reasons including the impact to the Sand Hollow Reservoir (State Park), longer travel distance compared to Alignment A (about 1 mile), and a requirement for substantially more slope, cut, and fill. Another major issue with Alignment C was the Dixie Springs development and the ridge to the east of Dixie Springs. Constructing a road to the east of the Dixie Springs development would require substantial slope, cut, and fill as a result of a mountain ridge in this area which rises 300 feet above the valley floor and would require a very steep grade on the Southern Corridor. The ridge has been designated as open space in the Hurricane Future Land Use Plan. Moving the alignment to the west would have split the Dixie Springs development. The topographic and development limitations in the area made the 3400 West connection to SR 9 the most optimal to minimize both cost and impacts to approved future developments. A connection at 3000 West or 3200 West would require the alignment to be built into the mountain ridge on the east side of the valley. Basically, the connection at 3400 West resulted in a safe connection; substantially reduced the amount of slope, cut, and fill; was developed in coordination with the Dixie Springs and Outlaw Ridge developments; and had a shorter travel distance. Because a connection at 3000 West–3200 West was longer in distance, would have a higher cost because of the ridge, and would provide similar travel characteristics as the 3400 West Alternative, it was eliminated from detailed study.

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P-014-09		*Comment:* In addition, the public alternative mentioned on p. 2-21 was dismissed from analysis for inappropriate reasons. The Final EIS states that one of these reasons was that the alternative would not align with other *proposed* transportation improvements identified in the St. George Transportation Master Plan, which include the Atkinville interchange and associated road south and west of I-15. Final EIS p. 2-21. This statement not only highlights the obvious agency bias towards a particular location on I-15 for an improper reason to dismiss an alternative from consideration. The other reasons presented to justify dismissal of this alternative are equally transparent and none of them justify eliminating this alternative from consideration. *Response:* See response to comment P-014-05 regarding the location of the I-15 connection. As noted in Final EIS Section 2.1.4.6, Other Alignment Option Considered (Final EIS page 2-21), the alternative would have resulted in 37 acres of impact to bearclaw poppy habitat compared to 6.2 acres with the Preferred Alternative. The alternative also resulted in out-of-direction travel, therefore reducing its use as a regional facility, and was not consistent with local land use plans.
P-014-10		*Comment:* In addition, the failure to analyze any type of mass transit alternative is a particularly egregious shortfall of the Final EIS, because it fails completely to analyze "cumulative alternatives" or the pairing of mass transit together and/or in conjunction with alternative road expansion as one of the means of meeting the project goals. *Davis*, 302 F.3d at 1122. Other paired or mixed alternatives should have been carried forward for in-depth review as well. The Final EIS attempted to justify this failure based upon information contained in a study that is 28 years old that states that a density of 9 dwellings per acre is required to justify a rail transit system. Final EIS p. 2-3. Based on this study, the Final EIS concluded that it may obtain a density of 7 dwelling units per acre, which is close to supporting a mass transit option, but then included unsupported statements such as "the WCWCD study may have overestimated future populations" to justify exclusion of a mass transit alternative. Final EIS pp. 2-3, 2-4. In addition, a mass transit option was allegedly not evaluated because there is no centralized business district in the area. However, on p. 3-6 of the document, the Final EIS states that an area of "open space currently in the south-central part of the city will be decreased in size and is planned for development into a town center and with residential land uses (St. George Planning, no date)." The dismissal of the mass transit option conveniently fails to mention this proposed town center. *Response:* Mass transit was considered, but FHWA determined that the current and future population base of the area could not support a rail transit system. Potential bus service was also evaluated; though it will continue to be an important part of the region's development, bus service could not meet the main purpose of providing a regional transportation facility between St. George, Hurricane, and Washington City. The proposed town center mentioned in the comment would still not provide the centralized business district required to support rail transit, but it would complement bus service. Finally, as stated in Final EIS Section 2.1.1.4, Conclusion (Final EIS page 2-5), none of the mass transit and arterial alternatives individually or combined would meet the project's purpose of providing a regional transportation facility.
P-014-11		*Comment:* As mentioned above, the Final EIS does not analyze any alternative terminus other than the connection to I-15 at the Atkinville Wash. The Final EIS states that the "location of I-15 just north of Atkinville Wash is a logical terminus based on the importance of I-15 to the regional transportation network." Final EIS p. 2-16. The Final EIS goes on to state "one suitable location was identified for the Southern Corridor connection to I-15 near the Atkinville Wash between areas of bearclaw poppy habitat. Other locations north or south of I-15 would have resulted in more impacts to habitat." Final EIS p. 2-19. These are mere unsupported conclusions. Of course, summarily choosing one feasible point of access to I-15 over other equally feasible locations does not in any way comport with the requirements of NEPA. *Response:* See response to comment P-014-05.

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P-014-12		*Comment:* Equally disturbing is the fact that the Final EIS is devoid of any alternatives, or discussion of the impact of alternatives, regarding other interchange locations along the route of the corridor. Some locations have been tentatively assigned, but the reader is left without any analysis of how or why those locations were designated over other possible locations. Significant impacts will accrue to our clients based upon the alternatives selected, the ultimate selection thereof and the impacts flowing therefrom. Bisecting a 2,700-acre parcel of property annexed to Hurricane, upon which development is intended, will obviously create significant impacts, but they are not arrayed or discussed. *Response:* As discussed in Section 2.2, Alternatives Considered (Final EIS page 2-22), interchange locations were developed in consultation with the City of St. George, Washington City, the City of Hurricane, Washington County, developers, and other local agencies such as the Bureau of Land Management (BLM). Interchange locations were selected based on connectivity to existing roads such as River Road in St. George or to provide access to major facilities such as the St. George replacement airport. In addition, the 10 to 12 interchange locations were developed using standard accepted interchange spacing of 1 to 3 miles.
P-014-13		*Comment:* Finally, the Final EIS does not analyze a partial build alternative or a build alternative that includes an analysis of the effects of the project in conjunction with likely expansions and improvements in arterial roadways. A partial build alternative, as repeatedly stated in the document, is the likely outcome of this project. A partial build alternative will result in only certain phases of the project being followed to completion, and as a result, arterial streets may be improved and/or expanded in conjunction with the project. The Final EIS, however, appears to rely on the assumption that local roadway improvements will not take place if the project is started and someday completed. This is illogical, and a partial build alternative should have been analyzed to provide a complete understanding of possible environmental effects of the project. *Response:* A partial build alternative is not the likely outcome for the project. FHWA expects that, by 2030, the full Southern Corridor project would be needed. Until the full build-out is needed, the project would be built in phases to meet travel demand requirements. A partial build alternative with arterials in 2030 would not meet the project purpose and need of providing a regional transportation facility that complements local land use plans.
P-014-14		*Comment:* The following reasonable alternatives should have been carried forward for detailed analysis: • Alignment "A" • Alignment "B" • An alignment near Alignment "C" that passes to the north of Sand Hollow Reservoir and terminates near 3000–3200 West • The public alternative mentioned at p. 2-21 of the Final EIS • Additional interchanges on I-15 in addition to the Atkinville Wash alternative • A Smart Growth alternative as outlined in Chapter 6 of the Final EIS • A "partial build" alternative • A mass transit alternative in conjunction with alternative road expansion • Alternative alignments for the corridor analyzing the effects of the proposed interchange locations • Alternative alignments for the corridor analyzing the effects of alternative interchange locations *Response:* See response to comments P-014-05 through P-014-13.

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P-014-15		*Comment:* Throughout the Final EIS, the analysis of the affected environment and environmental effects relies on a study done in conjunction with the Final EIS by P&D Consultants, which states that growth in the area is expected with or without the Southern Corridor and therefore the indirect impacts of building a highway through a rural desert landscape will be the same as if no highway is built. See Final EIS p. 4-7, 4-83 for examples. This circular logic is unsupported in the study and does not provide an adequate analysis of any of the environmental effects of the proposed project. *Response:* Washington County is expected to grow as shown in Final EIS Chapter 1, Purpose of and Need for Action. This growth will occur with or without the project. As discussed in Final EIS Section 2.1.2.1, Planned Growth Areas (Final EIS page 2-5), the best available data suggest that this growth will occur south and east of I-15 based on the limited available land north of I-15 and the developable land south of the freeway. This conclusion was confirmed by all of the city planners in the project area (Final EIS page 4-1). The P&D report was the best available information that showed how the area south of I-15 would develop with and without the Southern Corridor taking into account regional growth and available land.
P-014-16		*Comment:* Contrary to this repeated assumption, Table 4.1-2 does not show that "few" indirect growth impacts will occur because of the corridor. In fact, the table shows a substantial increase in commercial acreage, industrial acreage, and residential density of homes compared to the No-Build Alternative. Final EIS p. 4-10. *Response:* The information in Table 4.1-2 (Final EIS page 4-10) was provided to show how the area would develop with and without the Southern Corridor. It should be noted that there would be less overall land used with the Southern Corridor compared to the No-Build Alternative. In addition, with the Southern Corridor, the main developer of the area (SITLA) expects that 1,000 fewer acres would be used for residential property, although the density would be greater (1.07 vs. 4.19 units per acre). The higher density provides for more open space and would better support future bus transit. With a major transportation facility, the main developer of the area felt that more smart growth opportunities would be realized than if only local roads were constructed.
P-014-17		*Comment:* This is not a project in which the land surrounding the corridor is already developed or is otherwise committed to uses that were not contingent on the project. Rather, the project itself will increase commercial and industrial development in the area and these effects should be analyzed. *Utahns for Better Transportation* 305 F.3d at 1175 *citing City of Carmel-by-the-Sea v. United States Dep't of Transp.,* 123 F.3d 1142, 1162 (9th Cir. 1997). A conclusory statement that growth will increase with or without the project, or that development is inevitable, is insufficient to address cumulative impacts; the agency simply must provide an adequate discussion of growth-including impacts. *Davis v. Mineta*, 302 F.3d 1104, 1122-23 (10th Cir. 2002). All reasonably foreseeable induced growth, including the impacts from the proposed interchange locations and subsequent commercial and industrial development, should have been analyzed in the Final EIS to understand the full range of indirect and cumulative effects on the environment in this area as a result of the project. The Final EIS also failed to address, in any meaningful way, the cumulative impacts arising from providing a direct thoroughfare to three other large projects in the area consisting of the replacement airport, Sand Mountain SRMA, and Sand Hollow Reservoir together with the private developments. *Response:* Indirect impacts were considered in the EIS for the appropriate resource sections. Appendix K, Indirect Impact Analysis, provides an overview of how induced growth was considered in the EIS. Based on the best available information, FHWA determined that the area would grow and develop with or without the highway. This conclusion was confirmed by all of the city planners in the project area (Final EIS page 4-6, Section 4.1.1.2). The cumulative impact analysis in the EIS considered all remaining developable land (84,700 acres) in the urbanized areas of St. George, Washington City, Hurricane, Santa Clara, Ivins, La Verkin, and Toquerville being developed including the infrastructure to support such development (for example, roads). The 84,700 acres also include large developments such as the St. George replacement airport and Sand Hollow Reservoir. The overall cumulative analysis analyzed the entire urbanized area eventually being built out which would capture any proposed project in the area including those

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		around interchanges.
P-014-18		*Comment:* In addition, the Final EIS entirely fails to analyze any of the environmental effects of the proposed 10–12 interchanges that may be built along the corridor. The Final EIS does not even analyze the effects of the "proposed" locations of the interchanges. Instead, it relies on statements such as "cities could use interchange placement as a tool for managing development and minimizing environmental impacts." Final EIS p. 4-11. Although this is a laudable goal for city planners, it is the agency's responsibility to analyze and propose a preferred alternative for the corridor that includes an analysis of likely interchange locations and then determine their effects on the environment. Table 4.1-3 attempts to evaluate the effects of the proposed interchange locations; however, this brief and unsupported analysis is clearly inadequate based upon NEPA standards. *Response:* Final EIS Table 4.1-3, Environmental Concerns with Development Adjacent to the Potential Interchanges (Final EIS page 4-12), provides an analysis of the interchange locations and identifies sensitive resources in the vicinity such as endangered species habitat. In addition, all of the right-of-way (400 feet) required for an interchange was analyzed for direct impacts in the Final EIS. The potential indirect impacts of interchange locations were considered in the indirect analysis which showed that the area would develop in those locations with or without the highway since the area is expected to grow from a population of 66,693 in 2000 to 208,641 in 2030. Since the cumulative impacts analysis included all land being developed in the area, it captured all potential impacts arising from development around interchanges.
P-014-19		*Comment:* For instance, eight of the listed interchange locations are subject to the statement "[a]lthough there are no resource issues identified, an interchange could change the land use in adjacent areas." If the interchange "could" change the land use in adjacent areas, then the Final EIS should have analyzed those indirect and cumulative effects of the project instead of summarily dismissing further analysis. Final EIS p. 4-13. At the very least, a supplemental EIS is required to appropriately analyze interchange locations and their effects on the regional environment. This is especially critical for my clients and others who may have interchanges located on their property and thus be impacted. *Response:* See response to comment P-014-18.
P-014-20		*Comment:* The Final EIS fails to take into account the impacts of the 400-foot right-of-way needed for the interchange locations and does not analyze significant impacts of the 300-foot right-of-way at alternative locations. If the interchanges may end up in any location, then the Final EIS should have analyzed each potential option. Also, the impact of a 400-foot swath across my client's land will be significant regarding use of the property, operational parameters, value, and other critical issues. None of these issues are arrayed or discussed as required by law. *Response:* See response to comment P-014-18 regarding the analysis of the 400-foot right-of-way. Property owners will be compensated at fair market value for any property acquired as part of the Southern Corridor project. These right-of-way costs were factored into the total cost of each alternative as shown in Table 2.2-1, Preliminary Southern Corridor Cost Estimate (Final EIS page 2-22). All environmental and social impacts were considered for each alternative including the Preferred Alternative and for the property identified in the comment.

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P-014-21		*Comment:* My client is especially concerned with this flaw in the Final EIS. The impacts of the preferred alternative and subsequent interchange locations on my client's property were not analyzed, although the alternative will bisect their property. Currently, the property is being considered for a large residential and mixed use development and has been annexed into Hurricane City. As it stands, the currently proposed route of the preferred alternative will create considerable severance damage to the property and the location of the alternative will require the project sponsors to incur substantial condemnation costs, neither of which were factored in the analysis of this alternative. As a much larger planned development than all of the others mentioned in the Final EIS, these cost will be significant and could increase based on the location of the interchanges on the property. The Final EIS fails to discuss any of these impacts or analyze alternative locations for interchanges or the corridor that may reduce these costs. *Response:* The potential impacts to platted developments approved by the city or county are considered in the EIS. The commenter did not provide the details of the proposed development other than stating that the property has been annexed into Hurricane. Based on consultation with the City of Hurricane, FHWA determined that there are currently no approved plans with the City of Hurricane for the property in question. Without the details of the proposed development, the analysis of specific impacts would be based on speculation. However, it should be noted that impacts to the property were considered in the EIS based on the best available information. For example, discussions with City of Hurricane planning officials noted that the land use shown in their future land use plan would not change as a result of the Southern Corridor except that there may be more commercial and industrial on the property adjacent to the highway. Noise impacts on the property were also analyzed (Final EIS, Appendix G, Noise Readings). Noise modeling demonstrated that the 65-dBA noise contour would extend between 240 feet and 270 feet from the highway onto the property. No social impacts were anticipated for the property such as disruption of community cohesion, relocations, impact to community facilities, and recreation facilities because there are no residential areas on or adjacent to the 2800 West Alternative on the property. As stated in the Final EIS. property owners would be compensated at fair market value for land required for the highway. Also see response to comment P-014-20.
P-014-22		*Comment:* As it stands, the currently proposed route of the preferred alternative will create considerable severance damages to the property and the location of the alternative will require the project sponsors to incur substantial condemnation costs, neither of which were factored into the analysis of this alternative. As a much larger planned development than all of the others mentioned in the Final EIS, these costs will be significant and could increase based upon the location of interchanges on the property. The Final EIS fails to discuss any of these impacts or analyze alternative locations for interchanges or the corridor that may reduce these costs. *Response:* See response to comment P-014-20.
P-014-23		*Comment:* The Final EIS is also flawed as it does not discuss any impacts associated with the proposed phasing of the project. "Phasing" refers to environmental impacts that occur because a project will not be constructed all at once. *Davis v. Mineta,* 302 F.3d 1104 (10th Cir. 2002). The Final EIS does not assess the impacts to persons who may live along the corridor during the time period after initial construction begins, but before the extension and expansion have been completed, a time period which may span a decade or more. *Id.* [See previous reference.] The potentially significant impacts from phasing have not been adequately studied in the Final EIS. *Id.* [See previous reference.] See 40 C.F.R. § 1508.8 (b). The best description of the phasing of this project is in the air emissions analysis on p. 4-50 of the Final EIS. The phases include building the two-lane segment about 10 miles long from I-15 to the proposed St. George replacement airport, to be completed by 2010. The second phase would extend the two-lane segment about 10 miles from the airport to SR 9. The distance of the second phase would "vary slightly" depending on the alternative selected (because they are all really the same alternative). The third phase would add two lanes to create a four-lane freeway for the entire project length to be completed between 2015 and 2025. Other than this description of the construction, the Final EIS does not

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		analyze any other effects of phasing the project and is therefore inadequate. *Response:* Few residents live along the corridor, and those residents are located along the 4300 West Alternative except for four houses north of the proposed St. George replacement airport. Based on the fact that almost no residents live along the corridor, initial construction would have few impacts to residents or the communities in the area and thus there would be no phasing impacts. It would be difficult to predict phasing impacts on future populations since their exact location cannot be determined at this time. Therefore there would be few if any phasing impacts to the social environment. The air quality analysis does provide an analysis of construction phasing.
P-014-24		*Comment:* My client stands to suffer considerable damages because of the phasing of this project. The location of potential interchange locations simply must be determined and analyzed or my client will incur damages from the uncertainty alone. Phasing the project with undetermined and unanalyzed interchange locations will result in a complete loss in value for, at the very least, the entire 300-foot right-of-way through my client's property. Astonishingly, however, the takings costs and other direct impacts associated with phasing of the project have been entirely omitted from analysis. This is unacceptable to my client. *Response:* See response to comment P-014-20.
P-014-25		*Comment:* Finally, the impacts analysis to state sensitive species and federally threatened and endangered species is inadequate. Foremost, the indirect and cumulative impacts to most of these species were not adequately analyzed in the study. In fact, the Final EIS makes the unsupported statement that "few indirect impacts that might occur would be associated with interchanges because of the likely commercial development. These indirect impacts are analyzed below for the two species (Holmgren milkvetch and bearclaw poppy) that occur near the proposed interchanges." Based on this statement, the Final EIS omits analysis of the indirect effects associated with the project for all but two species in the area and then, for those two species, only analyzes the effects that may be caused by several yet-to-be-determined interchange locations. *Response:* FHWA consulted with USFWS, BLM, and the Utah Division of Wildlife Resources as part of project development. All of these agencies were involved in reviewing and preparing the analysis in the EIS. The results of the USFWS 2005 biological opinion are disclosed in the Final EIS (Final EIS page 4-97). The biological assessment submitted to USFWS by FHWA and the Final EIS included direct, indirect, and cumulative impacts to wildlife and threatened and endangered species.
P-014-26		*Comment:* It is improper to summarily conclude that the corridor will not result in adverse impacts or cause species to be listed as threatened and endangered in the future if one does know the full extent of the project. It is obvious that the full extent of the project is fundamentally unknown. A fully defined project must necessarily include the exact location and number of interchanges that will be built, the induced growth in the area of interchange locations, and the effects and impacts of the phased construction on the species, habitat, the property owners, and the public. Without analysis of that type of information, the Final EIS is deficient. *Response:* The impact analysis was based on full project build-out, which would provide the greatest environmental impacts. This analysis included up to 12 interchanges and the expected full development of the study area (up to 84,700 acres of land being developed as part of the cumulative impact analysis).

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P-014-27		*Comment:* Further, the Final EIS makes the assumption, without any scientific basis, that "no threatened or endangered species habitat would be affected by other projects near the proposed Southern Corridor, such as the St. George replacement airport and the Sand Hollow Reservoir." Final EIS p. 4-100. Given the location and number of endangered and threatened species in the area, as well as the habitat that will obviously be altered by the other related and connected projects such as Sand Hollow Reservoir, the airport, and the developments, this statement is clearly erroneous. *Response:* The environmental documents prepared for the St. George replacement airport and the Sand Hollow Reservoir did not list any impacts to threatened and endangered species. In addition, the statement on page 4-100 of the Final EIS notes that planned developments on state and private land could affect some species; it does not state that no other projects would contribute to impacts. The cumulative impacts to wildlife and threatened and endangered species from these state and private developments are analyzed in the Final EIS.
P-015-01	Mark A. Clemens, Utah Chapter, Sierra Club	*Comment:* However, in a phone conversation on 14 June 2005, Jock Whitworth, Zion National Park superintendent, informed Mark Clemens that no consultation had been held with employees of Zion National Park by FHWA, UDOT, or the U.S. Department of Interior on the Southern Corridor during the development of either the DEIS or Final EIS. We find it hard to believe that any meaningful analysis of impacts on this world-famous resource would not include consultation with park employees. *Response:* Zion National Park was contacted as part of the EIS process and a point of contact was established (Kezia Nielson). Both the Draft and Final EIS were provided to Zion National Park for review and comment. In addition, the 2001 Zion National Park General Management Plan was obtained from park employee Jeff Bradybough. Mr. Bradybough was contacted regarding visibility studies and haze monitoring devices for Zion National Park. He submitted the General Management Plan for Zion National Park and highlighted areas to consider regarding the park.
P-015-02		*Comment:* We appreciate dedication of a section in the DEIS and Final EIS to smart growth. The Final EIS, however, should take the next logical step and analyze the Smart Growth scenario, enhanced with an optimal transit system, as one of the alternatives to be compared to the other alternatives, not just to provide it as an informational piece about what it is possible to achieve. *Response:* See response to comment C-55.4 in the Final EIS (Final EIS page 11-117).
P-015-03		*Comment:* Then the Final EIS proceeds to ignore the Smart Growth scenario as a viable alternative, even though both St. George and Hurricane are in the process of incorporating smart growth measures in their land use and master plans. St. George's reasons include encouraging efficient use of land, provision of urban services in a cost-effective manner, and desire for a livable, attractive community. These are reasons that should appeal to most communities in the area. In addition, the large, growing retiree population would benefit from more compact, mixed-use land use and enhanced transit, which would make them less auto dependent. See more on senior citizen and non-driver needs below. *Response:* The Smart Growth chapter (Chapter 6) in the Final EIS is not an alternative, but provides information to the local governments on how the resources of the area could be used more efficiently if changes to land use are made. Such changes in land use do not diminish the need for the Southern Corridor project. In fact, even with the incorporation of smart growth land uses in the City of St. George's most recent land use plan, including mixed-use developments in the SITLA South Block area, it still shows a need for the Southern Corridor project to help provide the necessary infrastructure to implement the City's long-term vision. In addition, decisions regarding future land uses are outside the authority of FHWA and UDOT. See response to comment C-55.4 in the Final EIS (Final EIS page 11-117).

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P-015-04		*Comment:* The Smart Growth Alternative should be further enhanced with a robust transit system with all the "hardware and software" which makes a well-used transit system more possible. Software includes more compact residential land use, more compact destinations, easy bicycle and pedestrian access to transit stops, sufficient frequency, and other measures that make transit the mode choice for a significant number of trips. Transit and what makes it work is also important for non-drivers, such as many of the elderly population, who have no other choice. The Final EIS response to our comments on the need for analyzing a Smart Growth Alternative was, "To develop a separate smart growth alternative without considering local planning would be speculative." Yet, the Final EIS speculates on the availability of future mobile-source emission reduction regulations (after Tier 2) to continue to decrease emissions per vehicle (p. 4-58). Regarding land use plans, it is speculative to assume that currently proposed development will all be carried out and/or that future development will be of the same nature as presently proposed development—or that all of the projected population increase will occur. In Section 3.3.7, Quality of Life, p. 3-17 it is stated that "many residents are concerned that there has been too much development in St. George and the surrounding areas and feel that the development rate should decrease (Hunter 2001)." *Response:* Final EIS Section 2.1.1.3, Mass Transit (Final EIS page 2-3), evaluated the potential for a transit alternative including bus and rail transit, and the alternative did not meet the purpose and need of the project. As noted in that section, St. George lacks the residential densities and centralized business district to make such an alternative reasonable. Even with implementation of the City's current land use plan that implements some smart growth land uses, the dwelling densities, downtown size, and overall population would not be sufficient to support a rail transit system. In addition, mass transit would not provide the necessary transportation infrastructure to meet the commercial and industrial travel demand expected in the southern part of the city. Finally, a mass transit system for St. George would not meet the purpose of providing a regional transportation system between St. George, Washington, and Hurricane that complements local land use plans.
P-015-05		*Comment:* The Final EIS response to our DEIS comments infers that the proposed highway is too far away from Zion [National Park] to have an impact, in that "the proposed Southern Corridor would be about 14 air miles and 25 road miles from Zion National Park." The response also seems to indicate there is no need for the Final EIS to be concerned about air quality impacts on Zion National Park since "The Western Regional Air Partnership [WRAP] has been established to address visibility issues at Zion National Park." In consulting the WRAP Web site, one can see that the WRAP "Sources In and Near Class I Areas Forum" defines "near" as the 50-kilometer area surrounding the borders of Class I areas. The forum has been working on inventories of emissions, including mobile, and has goals of expanding data collection, improving modeling, and implementing cooperative, enforceable management plans in and near (50 kilometers) Class I areas. The Final EIS, in addition to inferring that the project is too far from Zion, apparently to affect it, but is also too close when it comes to considering the impact of $PM_{2.5}$ and ozone precursors emitted on the highway and in the induced development on Zion National Park and on the populated areas. There needs to be a thorough analysis of where the ozone and fine particulate pollution is formed and where it goes. We are very concerned that there was no consultation with the managers of the extraordinary treasure that is Zion National Park. *Response:* Air quality impacts to Zion National Park are analyzed in Final EIS Section 4.8, Air Quality Impacts (Final EIS page 4-49). As discussed, EPA does not require an analysis of $PM_{2.5}$ for either stationary or mobile sources pending collection of background data and modeling methods and revisions to rules specifying such analysis. On December 17, 2004, EPA took final action to designate attainment and nonattainment areas for $PM_{2.5}$. Under that action, the State of Utah was designated as an attainment area for the $PM_{2.5}$ standard. Table 4.8-2 in the Final EIS (Final EIS page 4-52) provides information about ozone precursors and, as shown, the build alternatives would result in fewer emissions than the

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		No-Build Alternative. In addition, the cumulative impacts to ozone precursors are analyzed in the Final EIS (Section 4.8.5, Cumulative Air Quality Impacts, Final EIS page 4-57), and FHWA determined that the Southern Corridor would have minor impacts to regional air emissions. See response to Draft EIS comment C-55.8 (Final EIS page 11-121). Also see response to comment P-015-01 in this Record of Decision regarding contact with Zion National Park and Draft EIS comment C-56.18 (Final EIS page 11-131) from the EPA regarding the air quality analysis in the EIS.
P-015-06		*Comment:* Mobile6 is the current emissions model and should be used. The national default vehicle mix should not be used. One would expect more SUVs [sport utility vehicles], vans, trailer homes, and similar vehicles in an area such as St. George than in the national vehicle mix. Getting the right mix is important since 1) these vehicles are much bigger emitters than cars and 2) they have a longer phase-in period for new emissions and gasoline standards than ordinary cars. *Response:* The Southern Corridor EIS process and air quality analysis was initiated before the release of MOBILE6 and therefore FHWA was not required to use the updated model. Given the low emissions associated with the proposed project (as shown in Table 4.8-2 in the Final EIS), it would be unlikely that the MOBILE6 model would show substantial differences in emission rates from those reported in the Final EIS. FHWA expects that the vehicle mix would be similar to national defaults given that the highway is for regional use within Washington County versus long travel use such as I-15.
P-015-07		*Comment:* Ozone and $PM_{2.5}$ are the two pollutants of primary concern, although PM_{10} from fugitive dust is also of concern. The susceptible population to ozone includes children, people with asthma and other respiratory problems, and people physically active out of doors—all of whom live in the St. George area. Ozone also adversely impacts vegetation at a lower level than the human health standards. $PM_{2.5}$ especially affects children, the elderly, and people with respiratory and cardiovascular problems. Both children and the elderly especially need clean air. Given the large percentage of older people currently and expected to be living in the St. George area, preventing health-impairing air pollution is very important. All measures to reduce any contributors to ozone and particulate matter should be pursued. As Chapter 6 points out, the Smart Growth scenario results in markedly decreased emissions. *Response:* See response to comment P-015-05 regarding $PM_{2.5}$ and ozone.
P-015-08		*Comment:* Data from 1995–1997 was used to show that the 1-hour ozone NAAQS [National Ambient Air Quality Standard] was not exceeded in that time period. Now we also have an 8-hour ozone standard. Given the rapid growth of people and vehicles in the St. George area, the high temperatures of the area, and the numbers of elderly people, children, and physically active people, it is important to monitor for ozone in the St. George area. In the DEIS, ozone is dismissed as a pollutant of concern because "ozone concentrations are usually lower near emission sources and higher farther away," and "ozone is considered a regional pollutant and is not addressed at the project level." The impacts of building a freeway and the subsequent development and area sources it would spawn include increased emissions of the chemical precursors to ozone, which the sun and heat would convert to ozone. This project and its results contribute to production of ozone, where ever it goes. To control ozone one must reduce precursor emissions. Also, the issue of presumably not being exposed to increased ozone in the project area leads to the need to project where the increased ozone will be found—how far away? St. George? Zion National Park (where not only people but also plants are affected)? In the Salt Lake Valley, high ozone levels are found in various points of the valley, with the precursors presumably being emitted in the valley, or at least along the Wasatch Front. *Response:* As noted in the response to comment P-015-05, ozone was analyzed in the Final EIS and the appropriate data were used. In addition, EPA issued final designations for the 8-hour ozone standard on April 15, 2004. Under that action, the State of Utah was designated as an attainment area for the 8-hour standard. The St. George area is still in attainment for all criteria pollutants and no regional conformity analysis is required.

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P-015-09		*Comment:* $PM_{2.5}$ is barely mentioned although it is a significant pollutant adversely affecting health and visibility. The NAAQS for $PM_{2.5}$ are in effect. It is also important to note that EPA requires notification of the sensitive population with levels far below the weak national standard. The current standard for attainment purposes is 65 $\mu g/m^3$, whereas the sensitive populations are to be warned to reduce their activities when levels reach 40.5 $\mu g/m^3$. EPA's CASAC committee [Clean Air Scientific Advisory Committee] proposes further tightening of the $PM_{2.5}$ standard because of the severity of effects. Elderly people are especially sensitive, particularly if they have any respiratory or cardiovascular problems. Health effects can include heart attacks and premature death by three years. Because of the severity of the health effects for a significant portion of the St. George population, it is important to have as low $PM_{2.5}$ and $PM_{2.5}$ precursor emissions as possible. The Smart Growth scenario shows lower emissions of those pollutants. *Response:* See response to comment P-015-05 regarding $PM_{2.5}$ analysis.
P-015-10		*Comment:* PM_{10} (the coarser portion) can also be important from a health and visibility standpoint where there is significant construction activity with resultant increased fugitive dust. *Response:* Air quality impacts to PM_{10} from construction are analyzed in Final EIS Section 4.8.2, Air Emission Estimates (Final EIS page 4-50). As noted, the temporary change in air quality from construction is too small to have a major effect on air quality, and there would be no long-term effects. In addition, since the project is in a designated attainment/unclassified area for PM_{10}, no quantitative or qualitative analysis for this pollutant is required. Also, any quantitative PM_{10} analysis does not apply until EPA develops a methodology to analyze impacts from highways. However, it should be noted that Final EIS Table 4.8-2 (Final EIS page 4-52) provides a regional estimate of PM_{10} emissions from highways in the St. George/Hurricane/Washington City area.
P-015-11		*Comment:* Fugitive dust from construction activity needs to be further addressed. Soil with a cryptogamic crust will be disturbed, which will result in the disturbed soil requiring time for a new crust to develop. This means more blowing dust. How long will such regrowth take? Also, water is required to suppress the dust. How much water will this take and what assures the availability of water? Construction-related fugitive dust is a highway safety issue as well, with dust blowing from the equipment and being trailed wherever the trucks go. Water suppression of dust on the highway can lead to very slick conditions. *Response:* See Final EIS Section 4.8, Air Quality Impacts (Final EIS page 4-49), for a discussion of construction-related emissions. Fugitive dust (PM_{10}) was calculated and estimated to be up to 603 tons per year during the peak of construction. As noted in the Final EIS, the contractor will need to maintain a fugitive dust control program including wetting excavation areas, unpaved parking and staging areas, and onsite stockpiles of debris, dirt, and dusty material. In addition, the contractor will be required to clean streets near the construction area to minimize dust on adjacent roadways and reduce potential safety issues.
P-015-12		*Comment:* The full amount of emissions from the planned highway as well as the ensuing development should be calculated and analyzed for the PSD increment that would be used in this area adjacent to the Class 1 area of Zion National Park. *Response:* Prevention of Significant Deterioration (PSD) applies to stationary sources and not mobile sources from highways. The full amount of emissions from the highway network in 2030 is provided in Final EIS Table 4.8-2 (Final EIS page 4-52), and FHWA determined that the overall emissions are small compared to larger western cities such as Denver and Salt Lake City, which are experiencing air quality improvements.

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P-015-13		*Comment:* It is rightfully pointed out that (1) there is a high percentage of older people in the study area, with growth in the number of retirees expected, and (2) older people have many vulnerabilities, including those affecting driving, as well as health problems. There is no information on how many non-drivers there are among senior citizens and others. The focus is on how many senior citizens are also low income. There needs to be much more of an analysis of community design and mobility needs and solutions for the elderly or retiree population in the study area, given the significance of this population. An emerging issue nationally is what to do about the elderly who shouldn't be driving, especially a problem in our auto-dependent society. There is a strong possibility a certain portion of the elderly won't be able to renew their drivers' licenses in the future or will have restrictions on the licenses. The Smart Growth scenario and enhanced transit would allow senior citizens to live independently longer and to enjoy walking to community centers as well as to access improved transit. The work trip is emphasized in the DEIS. An analysis of the senior population's needs should include their most frequent destinations, with solutions for these needs provided – especially if they are or will be non-drivers. An evaluation criteria for the alternatives should include how it affects senior citizens who can't or shouldn't be driving. The Smart Growth scenario with enhanced transit needs to be one of the alternatives that would use this criteria since (1) non-drivers are not addressed in the highway alternatives and (2) Smart Growth does provide for a less auto-dependent and more-community oriented way of life. *Response:* The purpose of the project is to provide a regional transportation system that would complement local land use plans. The alternatives developed meet the purpose and need for the project which provides a regional system that would meet the needs of all of the citizens. The Southern Corridor would provide regional access that can be used by local bus service and other forms of mass transit to provide for the needs of senior citizens. The Dixie Metropolitan Planning Organization along with the City of St. George are responsible for developing the local bus service. In addition, the current City of St. George land use plan includes smart growth elements which would allow citizens to locate near commercial establishments thus reducing reliance on automobiles.
P-015-14		*Comment:* There is little mention and virtually no impact analysis of the proposed freeway and resultant probable increased sprawl, water use, and air pollution on nearby Zion National Park. This is a very important national park that belongs to all of us, not just the people who may want to live in a low-density, auto-dependent fashion near Zion National Park. There needs to be a very serious study of the impact of this freeway and attendant development on Zion National Park where there has been an excellent attempt to increase mobility and decrease pollution. The PSD increment, the impact of increased $PM_{2.5}$ and ozone on human health, vegetation, and other air-quality-related values in Zion National Park need to be thoroughly analyzed. *Response:* See response to comments P-015-05 and P-015-12 regarding air quality impacts on Zion National Park. As stated in Draft EIS comment C-55.10 (Final EIS page 11-122), the expected regional growth that would influence resources such as water, land, and air quality would occur with or without the highway.
P-015-15		*Comment:* The highway will induce increased auto dependence and sprawl, which will increase water, land, and energy consumption. All factors of this cumulative impact need to be analyzed. *Response:* See response to Draft EIS comment C-55.10 (Final EIS page 11-122).

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P-015-16		*Comment:* The preferred alignment violates the Endangered Species Act. Although the State of Utah Dwarf Bear Claw Poppy Recovery Plan was approved in 1983 and the USFWS approved a recovery plan in 1985, no significant funding or effort has been implemented by either agency to protect and recover the species. The population trend for the poppy has been downward in recent years, and additional habitat has been lost. In light of these agency failures, any further loss of poppy habitat in the White Dome area is unacceptable. *Response:* See response to Draft EIS comment C-55.12 (Final EIS page 11-123).
P-015-17		*Comment:* The alignment that has been proposed for the Southern Corridor is directly south of one of the largest remaining populations of bearclaw poppy (*Arctomecon humilis*). While the mitigation that has been called for will protect 58.6 acres of this species' habitat at White Dome, the remaining habitat at this location currently has no other protection. If further measures are not taken to preserve and protect this species' habitat, the induced use and development of this area could accelerate the downward population trend of this species. Due to the urban development in the St. George area over the past decade and its subsequent destruction and fragmentation of dwarf-bearclaw poppy habitat, it is important to protect what remains. While a compensation ratio of 3-for-1 is better than the original 1-for-1 proposed in the draft environmental impact statement, it still may not be adequate to mitigate the negative impacts the Southern Corridor will have on the White Dome population. In many cases, the compensation ratios for the mitigation of impacts on wetlands are upwards of 15-for-1 when areas are of particularly high value or the species is at significant risk (wetlands in Washington State). In an area where this compensation may be the only form of protection from the direct and indirect impacts of the planned construction, it may be necessary to use a ratio that will provide more substantial protection. *Response:* The USFWS biological opinion stated that the project is not likely to jeopardize the continued existence of the Holmgren milkvetch and bearclaw poppy. FHWA and USFWS developed the appropriate mitigation ratios as part of the biological opinion. To protect the remaining habitat, two documents have recently been developed: a Memorandum of Understanding (MOU) and a Letter of Intent. FHWA, USFWS, the City of St. George, SITLA, UDOT, Washington County, BLM, and The Nature Conservancy have signed an *MOU for Preparing the Management Plan for Establishment of Holmgren Milkvetch and Dwarf Bearclaw Poppy Preserves in Washington County*. The goal of this MOU is to develop an understanding between the agencies of the components to the Management Plan, a schedule for completion, and the responsibilities of each agency in the preparation of the Management Plan. A Letter of Intent has been developed between SITLA, USFWS, The Nature Conservancy, BLM, and UDOT to implement the creation of land preserves for endangered plants located on SITLA's South Block property in Washington County. The Letter of Intent sets forth a mechanism for establishing a preserve for bearclaw poppy in the area of White Dome, a preserve for Holmgren milkvetch in an area south of Sun River and west of I-15, and a preserve for Holmgren milkvetch in the central valley of the South Block south of the Fort Pearce Industrial Park.
P-015-18		*Comment:* We recognize the efforts that have been made, through the realignment of the Southern Corridor 100 feet to the south, to minimize the impacts it will have on Holmgren milkvetch (*Astragalus holmgreniorum*). However, it is necessary to err on the side of caution with regard to impacting this species' habitat. As *A. holmgreniorum* has not yet had critical habitat designated for it, it is important that this species habitat be sufficiently protected to avoid degrading areas essential to the survival of the species. *Response:* See response to comment P-015-17.

Comment Number	Commenter	Comment and Response
P-015-19		*Comment:* In describing the environmental consequences of the Southern Corridor, it was stated that the "Siler cactus was not located along the Southern Corridor alignments, but it occurs just north of the right-of-way at White Dome" (Final EIS Section 4.14.1.2). It should be noted that Figure 2.5 shows the Southern Corridor traveling through a significant portion of the habitat of a Siler cactus population. *Response:* The habitat shown on Figure 2-5 (Final EIS page 2-47) is based on general mapping provided by BLM for the species. Surveys conducted for the Southern Corridor in the area found no Siler cactus within the alignment area. The biological opinion provided by USFWS stated that the Southern Corridor project would not jeopardize the continued existence of the Siler cactus. Preconstruction surveys will be required to determine cactus occurrence. Survey results will be coordinated with USFWS.
P-015-20		*Comment:* It has been suggested that the maintenance of a seed bank can help prevent genetic drift and inbreeding depression in small populations of rare plants (Ellstrand; McCue). With plants such as *A. humilis* and *A. holmgreniorum* that produce long-lived seeds (up to 10 years for *A. humilis*), the seed bank can provide long-term genetic stability for a given population (Ellstrand). It has also been shown, in other populations of rare plants, that the genetic diversity in the seed bank can be significantly higher than that of the adult population (McCue). It is important, when considering the significant fluctuations in population size of both *A. humilis* and *A. holmgreniorum* (USFWS) and their reliance on their seed banks to ensure long-term viability (Allphin; *Federal Register* 49564), that a study be conducted to determine the extent of the seed bank in the affected areas. In areas of potential habitat for these species, studies may find the presence of a seed bank even in the absence of living plants. *Response:* See response to Draft EIS comment C-57.7 (Final EIS page 11-144).
P-015-21		*Comment:* Due to the absence of any apparent means for long-range seed dispersal, *A. humilis* and *A. holmgreniorum* appear to rely on native ground-dwelling bees for pollination and, therefore, the maintenance of gene flow to other populations. The impact statement recognizes the potential for negative impacts to affect the bee species (*Perdita meconis*, *Synhalonia quadricincta*, and *Halics* spp.) that serve as the primary means of pollination for both *A. humilis* and *A. holmgreniorum*. It is also noted that this could result in a reduction in the gene flow between populations and consequently affect the reproductive success of both species (Final EIS Section 4.14.1.2). However, no studies have been done to determine the impacts the construction of the Southern Corridor will have on these species. Very little is known about the life history of these bees and without adequate study it would be difficult, if not impossible, to determine the effects the construction of the Southern Corridor would have on them. Therefore the conclusion on p. 4-101, "Overall, few induced-growth impacts to the bearclaw poppy would be caused by the Southern Corridor compared to the No-Build Alternative," is not justified in light of the absence of data on bee populations and habitat. By looking at similar species of pollinators, we can gain a better understanding of how the construction of the Southern Corridor will affect their interaction with *A. humilis* and *A. holmgreniorum*. Previous studies of other species of ground-nesting bees have shown an average foraging range of 150–600 meters from the site of their nest (Gathmann). In addition, a study by Sarah Greenleaf et al. at Princeton University has found a reliable method that could be used to calculate the maximum foraging range of *P. meconis*, *S. quadricincta*, and *H.* spp. based on the intertegral span (the distance between the base of the wings) of these species. The range of a species must contain a number of different resources, including nest sites, materials for construction of nests, nectar for adults to feed on, and pollen for the larvae to consume (Gathmann). It is also know that there may be a spatial separation between these habitat requirements and the location of the wild bee's nest (Gathmann). In order for these species to successfully reproduce they must be able to move, uninhibited, among the different habitat requirements (Gathmann). Extrapolating from the characteristics mentioned above, the placement of the right-of-way between the nesting site of the bees and their foraging site (*A. humilis* and *A. holmgreniorum* habitat) may significantly impact both the pollinators and the plants. With respect to the reproductive success of plants, it has been found that the lower visitation

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		rates of pollinators, in fragmented habitat, have been associated with lower seed sets in plants (Ellstrand). Due to the strong reliance of *A. humilis* and *A. holmgreniorum* on the soil seed bank to ensure long-term viability, it is possible that reduced visitation would impact the long-term survivability of the species. Nevertheless, further study would provide a better understanding of the specific relation ship between *A. humilis* and *A. holmgreniorum* and their pollinator species. These studies would also facilitate the development of mitigation measures for any negative impacts that may occur. One possible mitigation measure that has been shown to facilitate the movement of other insects across a barrier is the construction of a vegetated wildlife overpass. Such overpasses have been used successfully throughout the North America and Europe (Forman), including one in southwestern Utah that was constructed to allow the safe passage of deer (citation) [citation was not included in the original comment]. In addition to providing a corridor for the movement of larger animals, research has indicated that birds and butterflies have also used vegetated overpasses (Forman et al., 2003). *Response:* See response to Draft EIS comment C-57.8 (Final EIS page 11-145).
P-015-22		*Comment:* When examining the effects of the Southern Corridor on the endangered plant species in the area, it is recognized that a reduction in the gene flow between populations may occur. In describing the mitigation of the impacts on these species, no mention is made of any plan to offset the reduced gene flow. This is significant because previous research has revealed that one of the most disruptive factors to community stability is the alteration in the balance of genetic drift and gene flow, which establish the genetic variation of a species (Novacek). To counteract this change, it is possible to determine the historical levels of gene flow for a given species through genetic analysis (Ellstrand). There are several methods which can then be used to replicate that level. These include transplantation, the transportation of seeds from one population to another, and cross-pollination among populations (Ellstrand). *Response:* See response to Draft EIS comment C-57.8 (Final EIS page 11-145).
P-015-23		*Comment:* One of the major threats to the existence of *A. holmgreniorum* is the introduction of invasive species into its habitat. The Biological Opinion of the U.S. Fish and Wildlife Service identifies cheatgrass (*Bromus tectorum*) and other *Bromus* spp. as competitors to *A. holmgreniorum*. It has been found, in some areas, that as much of 74% of the roadside flora may be comprised of invasive species (Wester). Researchers have also noted that one of the important factors in the number of problem weeds in a reserve is the distance of the reserve from roads and railways (Spellerberg). These examples demonstrate the significant impact that transportation of invasive species by vehicles, contaminated soils used during construction, or recreation in the area (e.g. ORVs, hikers, and bikers) can have on an area. The impact statement explicitly recognizes the need to control the introduction of invasive species by construction activities and ORV use. However, it seems almost inevitable that, if not introduced by these means, exotic species will eventually be introduced into the habitat of *A. holmgreniorum*. Rather than trying to prevent the introduction of invasive species by vehicles or recreational use of the area, it may be a better use of resources to work to detect and eradicate infestations of exotic species. However it is done, a specific plan for the control of these competing species needs to be developed prior to the construction of the Southern Corridor and continually carried out after its completion. *Response:* See response to Draft EIS comment C-57.25 (Final EIS page 11-153). Eradication of invasive species on land not owned by UDOT is outside their authority.

Comment Number	Commenter	Comment and Response
P-016-01	Anthony J. Frates, Utah Native Plant Society, and Daniel R. Patterson, Center for Biological Diversity	*Comment:* No mitigation is provided for SITLA's proposed Fort Pearce Industrial Park Access Road for the bearclaw poppy. There remains no mitigation for a road proposed by SITLA that would split White Dome in the very area where *Arctomecon humilis* still grows. Various routes were proposed, all of which were clearly designed to connect to I-15 via the Southern Corridor. The impacts related to the Fort Pearce road are clearly a result of the Southern Corridor. There would be no reason to construct a road such as this were it not for freeway access. No disclosures until the public meetings held in May 2004 were previously made. There is significant evidence to suggest that the State of Utah intended to protect White Dome and the area around Atkinville, not fragment and destroy it. This includes a 1982 "recovery plan" and mention by then-Gov. Scott Matheson referring to White Dome as a state ACEC [area of critical environmental concern]. Should the ill-advised road through White Dome still be built, mitigation must be provided for the resulting loss. There should also be a miles-per-hour restriction to reduce the impact to native pollinators. *Response:* The potential SITLA road over White Dome was considered in the indirect impact analysis for the bearclaw poppy. Appendix K of the Final EIS, Indirect Impact Analysis, details how indirect impacts were determined. Discussions with SITLA determined that the proposed road would be built even if the Southern Corridor was not built so that the industrial traffic could be separated from residential areas as shown on their development plans. Therefore, the proposed road was not considered an indirect impact of the Southern Corridor project.
P-016-02		*Comment:* No mitigation is provided for the destruction of the bearclaw poppy population at Atkinville. A land trade that was completed sometime circa [about] 1998 between SITLA and the BLM has led to a lose-lose scenario for *Arctomecon humilis*. The Southern Corridor will cause all sorts of freeway sprawl as gas stations and convenience stores move down I-15 to intercept northbound and other traffic. SITLA has apparently already obtained "private development" zoning for an area that the State Lands & Forestry had deemed as, in essence, critical habitat. A viable population once grew in the area of the proposed Atkinville interchange which is now in shambles and which has undergone significant declines even in the last couple of years. Rapid Sun River expansion has increased the level of OHV and other abuse of nearby fragile lands. Lands with biological crusts have been demolished. Mitigation for losses for the Atkinville population must be provided if an interchange is constructed there. *Response:* See Section 3.7 Threatened and Endangered Species of this Record of Decision regarding impacts to the bearclaw poppy from the Atkinville Interchange. Additional analysis conducted after the Final EIS determine some impact would occur in this area and recommended more mitigation.
P-016-03		*Comment:* No-Build Alternative disadvantage is still invalid and flawed. The primary disadvantage of the No-Build Alternative in relation to the bearclaw poppy remains invalid. The Southern Corridor will in fact bring increased exposure and access to Warner Ridge (it is easy to cut through fences, fences become damaged, etc.). We are aware of no scientist who would support the stated disadvantage, and the BLM has already obtained funding to fence Warner Ridge, a fact we notified Mr. Gregory Punske of on March 20, 2004, but which has nonetheless still not been taken into account. The No-Build Alternative lacks any credible scientific support and makes erroneous assumptions that no one will do anything absent construction of the road and only that the BLM or FWS "believes" that it might help. *Response:* See response to Draft EIS comments C-57.4 and C-57.5 (Final EIS page 11-143).

Comment Number	Commenter	Comment and Response
P-016-04		*Comment:* Impacts to biological soil crusts require analysis. We continue to maintain that a biological crust analysis is required. BLM Technical Reference 1730-2 (Belnap 2001) recommends an analysis of impacts to biological soil crusts on all use applications (p. 70). It is clear that crusts will be impacted by this project, the extent of which has not been determined. Biological soil crusts play a critical role in desert ecosystems (Belnap 2002). Soil surface disturbance including mechanical disturbances by vehicles reduces or eliminates nitogenase activity in biological soil crusts (Belnap 2002; Belnap 2001). Beneficial/critical relationships between biological soil crusts and rate plants in the region have been clearly established. For purposes of both soil control and providing biologically usable nitrogen, crusts have been shown to be important to *Arctomecon humilis* (Harper and Van Buren 2004). Thick biological soil crusts have typically been observed in association with *Pediocactus sileri* (personal communications with Leila Shultz, Vince Tepedino, and Therese Meyer, Feb. 2005 and our own observations) and play a critical role in the survival of that species. The response on page 11-147 to our prior request that "cryptogams may be important to poppy" is simply not correct. *Response:* See response to Draft EIS comment C-57.11 (Final EIS page 11-147).
P-016-05		*Comment:* Pollinator issues have still largely been ignored and rare plant population fragmentation issues remain unaddressed. Dr. Vincent Tepedino indicates that there will be few successful bee crossings. The higher the speed limit, the worse the chances are of bee survival. Roads/interchanges that are constructed adjacent to rare plant habitats or that directly fragment habitats should have a maximum speed limit of 25 mph (personal communications with Dr. Tepedino, 2005). Pollen transport by humans may be necessary to offset gene flow problems (personal communications with Dr. Tepedino, 2005). Mitigation funds for a special team to address this issue must be provided and should include Dr. Vincent Tepedino and Dr. Loreen Woolstenhulme. Mitigation measures for impacts on wildlife (Final EIS Section 4.12.4.5) should be expanded to include crossing considerations by native bees. Bees will need a stimulus to cross a road. Roads form formidable barriers even to large, longer-distance-flying bees (Bhattacharyaa 2002) and unless displaced or forced to forage will tend to not move between plant populations. So the problem is severe. The tiny *Perdita meconis* is a BLM Nevada sensitive species and should have been considered as a special-status species (*Forgotten Pollinators*, p. 20). *Response:* See response to Draft EIS comment C-57.8 (Final EIS page 11-145).
P-016-06		*Comment:* Critical habitat designation for *Astragalus holmgrenrioum* continues to be intentionally ignored. The Holmgren milkvetch (*Astragalus holmgrenrioum*) was federally listed in September 2001 with critical habitat. Any biological opinion issued by the U.S. Fish and Wildlife Service (FWS) should assess whether there is an adverse modification to the critical habitat so designated for this species. The FWS, however, has failed to designate that habitat. On September 27, 2004, a lawsuit was filed by the Center for Biological Diversity and the Utah Native Plant Society that related to this and one other species. This suit was filed pursuant to provisions of the Endangered Species Act [ESA]. FWS has agreed to publish a critical habitat proposal by March 17, 2006, and finalize it by December 16, 2006. In view of this, the biological opinion should be reissued in conjunction with this project concerning whether it will destroy or adversely modify designated critical habitat. The study area most certainly contains critical habitat for the Holmgren milkvetch. The critical habitat designation should have been made earlier, and the delay in completing that designation can only be blamed on government delay and failure of Congress to properly fund the ESA. Critical habitat considerations will need to include state and federal lands. The response on page 11-147 in the Final EIS failed to even acknowledge the issue of critical habitat designation, nor was it addressed in the revised biological opinion. *Response:* A biological opinion was issued by USFWS for the project and stated that the Southern Corridor would not likely jeopardize the continued existence of the Holmgren milkvetch. No critical habitat has been designated for this plant species in the project area.

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		In discussion with USFWS, if critical habitat does become designated in the future as noted in the comment, additional consultation may be required. See response to Draft EIS comment C-57.12 (Final EIS page 11-147).
P-016-07		*Comment:* Additional mitigation is required because cumulative impacts are not being fully taken into account. Part of the mitigation for the Southern Corridor, should it proceed, would include an endowment for (a) ongoing monitoring of rare and endangered plant species and (b) manual pollen transport or other activities as decided by a specially appointed habitat fragmentation team to address gene flow and related issues regarding rare plant populations. The Southern Corridor is "just the beginning" as indicated in an April 24, 2005, article (*Spectrum* 2005). The article goes on to state that the "Sun River Parkway, which will connect to the new Atkinville interchange, will eventually provide the beginning of the Western Corridor running along the west side of St. George up into the Ivins area. Apparently the City of St. George will be spending $200,000 next year to look at beltway issues. There have been land swapping negotiations and discussions and proposed maps with respect to the Western Corridor for many years, perhaps even a decade. We raised this issue in our DEIS response and the reply was essentially that other impacts could not be considered until projects were formally proposed (see Final EIS page 11-156). Yet, these imminently planned projects will impact the same imperiled species, *Arctomecon humilis* and *Astragalus holmgrenrioum*. These species have nowhere else to go. No new populations have been found despite extensive surveying. Not only have these species been utterly fragmented by I-15 which was constructed in a less-enlightened era, massive Bloomington expansion which built over poppy [and] milkvetch habitat, Sun River expansion which is potentially building over Holmgren milkvetch habitat, severe losses at Shinob Kibe and elsewhere, and then the drought of recent years, but not all of these federal and state highway and other road projects, will impact them further. They will simply not be able to withstand all of these impacts. If this project proceeds, mitigation MUST include the protection of the most pristine populations of these two species which would include Boomer Hill and Cove Wash which lie in the path of the inevitable Western Corridor. These areas must be completely protected at least with funds for Southern Corridor impacts. These areas must be fully protected with fencing and with connecting corridors to nearby plant populations where gene flow is still possible. *Response:* The project proponent is not required to mitigate for the actions of others, but only to consider those impacts as part of the cumulative impact analysis. The cumulative impacts analysis conducted for the Southern Corridor project assumes that most developable land in Washington County's urbanized areas would be developed by 2030 and therefore would include the impacts of any other proposed roads or developments on private and state lands. The cumulative analysis is based on all plant habitat on private and state lands being developed. FHWA and UDOT have been working with other agencies to protect additional plant habitat. To protect the remaining habitat, two documents have been recently developed: a Memorandum of Understanding (MOU) and a Letter of Intent. FHWA, USFWS, the City of St. George, SITLA, UDOT, Washington County, BLM, and The Nature Conservancy have signed an *MOU for Preparing the Management Plan for Establishment of Holmgren Milk vetch and Dwarf Bearclaw Poppy Preserves in Washington County.* The goal of this MOU is to develop an understanding between the agencies of the components to the Management Plan, a schedule for completion, and the responsibilities of each agency in the preparation of the Management Plan. A Letter of Intent has been developed between SITLA, USFWS, The Nature Conservancy, BLM, and UDOT to implement the creation of land preserves for endangered plants located on SITLA's South Block property in Washington County. The Letter of Intent sets forth a mechanism for establishing a preserve for bearclaw poppy in the area of White Dome, a preserve for Holmgren milkvetch in an area south of Sun River and west of I-15, and a preserve for Holmgren milkvetch in the central valley of the South Block south of the Fort Pearce Industrial Park.

Comment Number	Commenter	Comment and Response
P-016-08		*Comment:* Roads as connecting corridors. Highways per U.S. Department of Transportation pamphlets and flyers are supposed to serve as corridors, and innovative ecological solutions are required (*Nature of Roadsides*, FHWA publication). Revegetation work should only involve seed collected from adjacent areas. Any/all listed species as well as sensitive plant species should be protected within rights-of-way. If an Atkinville Interchange is constructed, connecting planting beds of nearby Utah native plants should be provided and maintained which could help to provide at least some possibility of pollinator connectivity as well as help to function as a safety barrier for bicycle or pedestrian crossings and improve aesthetics in general and provide for a healthier environment. We would recommend that Dr. Susan Meyer of the FS [Forest Service] Shrub Lab in Provo be consulted in this regard and with respect to other possible roadway strips that could be planted whether in conjunction with overpasses or in connection with other roadways relating to this project. *Response:* As noted in Draft EIS comment C- 57.29 (Final EIS page 11-154), only native plants will be used to revegetate the disturbed area caused by highway construction. In addition, part of the mitigation for the project includes posting signs along the corridor to notify UDOT maintenance crews to contact the UDOT Regional Environmental Coordinator to ensure that no chemical sprays or grading activities occur in sensitive habitat areas unless they are necessary for public safety. These mitigations should help protect plant species in the right-of-way after construction. In addition, UDOT will implement an invasive species program to minimize the introduction of non-native species.
P-016-09		*Comment:* Summary. Significant mitigation must be provided in view of the clear nexus between SITLA activities and the Southern Corridor and because of a wide array of impending impacts and cumulative historical impacts and with increased focus on pollinators. Currently populations that exist within the aim of the Atkinville interchange in light of plans to connect it to Santa Clara must be provided for now and cannot be delayed for consideration later. *Response:* See response to comment P-016-07.

6.0 Conclusion

FHWA has determined that the Selected Alternative best meets the transportation needs for the traveling public while effectively considering environmental, safety, and socioeconomic factors. This decision is based on the Final EIS and the entire project record.

In reaching our decision, the FHWA has considered all of the issues raised in the record including the information contained in (and comments to) the Draft and Final EISs. The Selected Alternative was developed through a public process that included project adjustments to avoid and minimize environmental impacts. FHWA consulted with other federal and state agencies including BLM, USFWS, EPA, U.S. Army Corps of Engineers, Natural Resources Conservation Service, the Utah Department of Natural Resources, the Utah Department of Environmental Quality, the Utah State Historic Preservation Office, the Advisory Council on Historic Preservation, Native American Tribes, and the Arizona Department of Fish and Game. A full list of interagency coordination is included in the Final EIS.

Based on the analysis and evaluation in the Final EIS and after careful consideration of the social, economic, and environmental factors and input from the public involvement process, it is our decision to adopt the Selected Alternative, 2800 West Alternative, as the proposed action for the project.

Date: October 17, 2005

Original signed by:

for Division Administrator
Federal Highway Administration